SOAP

and SANITARY CHEMICALS

In this issue . . .

Contaminated surfaces—cleaning with detergents

* * * *

Silicones in modern wax and polish formulations

* * * *

Adulteration of carnauba wax—means of detection

* * * *

Hand soaps and cleaners—the discussion continues

* * * *

Cover photo . . . John M. Hancock, chairman, and Jervis J. Babb, president of Lever Brothers, spoke at dedication of new Lever West Coast plant at Los Angeles. *(See page 27.)*

JULY 1951

"It always happens ... with A NORDA ORIGINAL"

Use A NORDA ORIGINAL to give a product a distinguished difference. Put it in all your new product plans. Improve your old products with it. Give them all this smell that will sell them.

A NORDA ORIGINAL makes your products unique, distinctively yours alone. It combines spicy old favorites with subtly chosen new fragrances. It will help produce matchless best-sellers.

Send today to Norda, *first ever to talk sales scents*, for your convincing free samples of A NORDA ORIGINAL.

NORDA MAKES
GOOD SCENTS

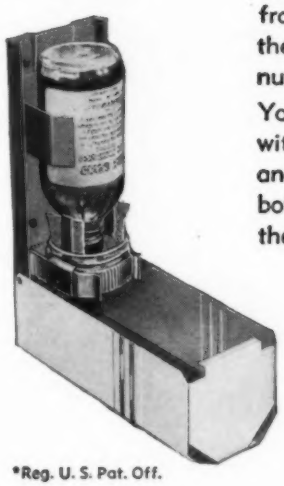
Norda ESSENTIAL OIL AND CHEMICAL COMPANY, INC.
601 West 26th Street, New York 1, N. Y

CHICAGO • LOS ANGELES • ST PAUL • MONTREAL • TORONTO • HAVANA • MEXICO CITY • LONDON • PARIS

VITOZONE Air Fresh

A PAIR OF PROFIT-MAKERS!

VITOZONE* LIQUID AIR FRESH and DISPENSING CABINET



They work in pairs to give your sales an exhilarating lift! The bottle holds our own formula for bringing pleasant air to the mustiest of rooms. There is no intense perfumed odor to cover the foul one—just a wonderfully clean fragrance that seems to banish all odors in theatres, restaurants, lavatories, hospitals and nurseries.

You'll get bigger business—better business with VITOZONE* LIQUID AIR FRESH. Send an order now for the smartly labeled 8 oz. bottles or the combination deal that includes the unique dispensing cabinet.

Opened, the cabinet shows a wick-in-well construction that helps to spread VITOZONE* LIQUID AIR FRESH to every corner of the room. Closed it displays a sleek, modern design done in colored metal—a decorative asset anywhere.

*Reg. U. S. Pat. Off.

Write now for additional information and a sample bottle.

FULD BROS., Inc. 702 South Wolfe St. Baltimore 31, Md. Los Angeles Calif.

Manufacturers of Sanitary Maintenance Chemicals

Sight + Scent = Sales

Pure whiteness invites the shopper to reach for a bar of soap on display. Pleasing fragrance urges her to buy. Thus sight plus scent equals sales in thousands of stores every day. That's why Coumarin Monsanto can help *your* business.

Coumarin Monsanto, used with accepted antioxidants, does not discolor white soaps when employed as a fixative for perfume oils. White soaps *stay* white, even when exposed for long periods. And perfumes hold their alluring fragrance.

Up to 1915, tonca beans and deertongue were the accepted natural sources of coumarin. Then, Monsanto laboratories captured the active ingredients of coumarin and since have produced the product under strict chemical control.

Coumarin Monsanto is a superior product of unexcelled, uniform purity; in fact, it is N. F. It comes in crystals of superlative whiteness and true aroma. It has excellent solubility and is easy and dependable to use.

Your request will bring literature filled with useful information, including helpful solubility tables. Address the nearest Monsanto Sales Office or MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second St., St. Louis 4, Missouri.

☆ ☆ ☆ ☆

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

MONSANTO AROMA AND FLAVOR CHEMICALS

Coumarin Monsanto • Ethavan (Monsanto's Ethyl Vanillin) • Methyl Salicylate, U.S.P. (Monsanto's synthetic oil of wintergreen) • Vanillin Monsanto. *Ethavan: Reg. U. S. Pat. Off.*

MONSANTO
CHEMICALS AND PLASTICS

SERVING INDUSTRY. . .WHICH SERVES MANKIND

SOAP and SANITARY CHEMICALS

Volume XXVII
Number 7
July 1951

CONTENTS

Editorials	25
New Lever Plant Opens in California	27
Cleaning Contaminated Surfaces By D. H. Ross	30
Philadelphia Quartz is 120 Years Old	33
Hand Cleaners and Protectants (Part II) By Milton A. Lesser	34
Hard Surface Cleaners (Part II) By Jay C. Harris	38
Formulation of Emulsions By George L. Brown and Robert J. Myers	43
Stove Polish Formulations	79
Silicones in Chemical Specialties By Walter J. Dugan	114
N.S.S.A. Meets, Elects Ridge	117
Detection of Wax Additives By Charles J. Marsel, Cyril S. Treacy and Rino L. Godino	122
Role of Atmospheric Humidity in Sterilization of Surfaces By Edward W. Dunklin and William Lester, Jr., Md.	127
New Trade Marks	75
Bids and Awards	77
Production Clinic	87
Products and Processes	91
New Patents	93
Soap Plant Observer	95
Sanitary Products Section	99
Classified Advertising	159
Advertisers' Index	163

FRANK J. REILLY, Editor

Associate Editor
ELEONORE KANAR

Business Manager
THOMAS MORGAN

Published Monthly By
MAC NAIR-DORLAND COMPANY
254 W. 31 St., New York 1, N. Y.

Chicago Office:
333 N. Michigan Blvd.

Ira P. MacNair, Pres.
Grant A. Dorland, V. Pres. and Treas.

MEMBER AUDIT BUREAU OF CIRCULATIONS

Subscription rates: U. S., $4.00 per year; Canadian, $5.00; Foreign, $6.00. Copy closing dates—22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Entered as second-class matter June 16, 1949, at the Post Office, New York, N. Y., under the act of March 3, 1879.

At your fingertips..... Valuable Data on Product Development with

"TRITON SURFACE-ACTIVE AGENTS"

THROUGH BETTER

Detergency
Wettability
Rinsability
Stability
Dispersion
Emulsification
Adaptability

FOR

Household and industrial cleaners, insecticides and sanitizers, cosmetics, and many other products.

This valuable, fact-packed handbook is yours for the asking. Send us your request on a business letterhead to insure prompt delivery of your copy.

TRITON is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

The tight-wire artist that thrills his audience nightly with feats of daring knows the importance of balance—for one slip could mean serious injury.

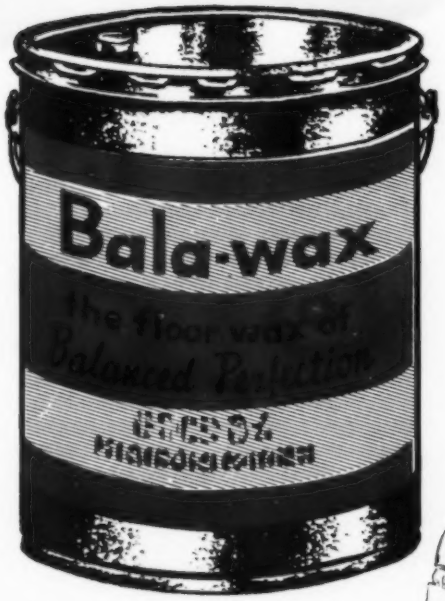
Balance IS IMPORTANT!

The same balance is important in wax—a balance that allows a high luster and yet prevents slip—for here again a slip of the foot may result in an accident.

BALA-WAX is one of the finest waxes on the market today—compounded with PURE CARNAUBA WAX and other ingredients. It gives you a safe walking surface that has durability and high luster.

Many so called non-slip waxes become tacky, soft, and gummy, adhering to dirt and difficult to clean—making dissatisfied users, and increasing maintenance costs. BALA-WAX eliminates these problems. It's been tested and successfully used in schools, office buildings, restaurants, hospitals, stores and various types of institutions from coast to coast. It holds up under the heaviest traffic.

Get BALA-WAX—
the wax of balanced perfection.



Don't get stuck with an inferior wax.

Hysan PRODUCTS CO.

932 W. 38th Place, Chicago, Illinois

Manufacturers of Sanitary Chemicals Since 1926
Selling Exclusively to Jobbers and Distributors

Versatile Detergent

Formulators, compounders and mixers of household and industrial cleaners put Monsanto Santomerse No. 1 on their preferred lists because of its versatility. It is high in detergency . . . a rapid wetter . . . an efficient emulsifier. Santomerse No. 1 is made in three densities to give you the bulking you want. It is compatible with other detergents and builders . . . free-flowing and easy to blend. Manufactured under strict quality control, Santomerse No. 1 always is *uniform* . . . always delivers uniform results. For technical information, including suggestions on compounding, contact any Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri.

Santomerse: Reg. U. S. Pat. Off.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

MONSANTO
CHEMICALS AND PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

Take a Consumer's Look at Your Product

COLORFUL CALMAR SPRAYERS

make your product easier to use...easier to sell

Visualize your own product glamorized with a colorful Calmar Sprayer. Greater eye appeal, greater convenience in using mean better consumer acceptance, *more sales!*

Luxury Colors at Low Cost
Carnation Red, Bright Blue, Sky Blue, Kelly Green, Ivory and Canary Yellow . . . these consumer-appeal colors in head and collar combinations modernize your package.

Calmar Sprayers are available without restriction and at lower cost than hard-to-get metal sprayers. If your product is sprayable, it will pay you to get full information.

Write or wire for sample. Be sure to specify cap size and over-all height of your package. Calmar Plastic Sprayers fit any package with cap size 15mm to 43mm.

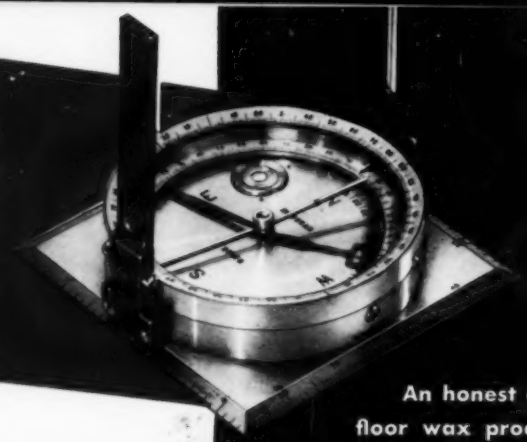
Guaranteed Calmar Sprayers Last Longer!

Calmar Company

Designers and Manufacturers of
FUNCTIONAL CLOSURES FOR THE PACKAGING INDUSTRY
6800 McKINLEY AVE., LOS ANGELES 1, CALIFORNIA

A GUIDE

TO WAX PRODUCTS PURCHASING FOR PRIVATE BRAND RESALE



An honest appraisal of floor wax products as we see it is offered to guide wax buyers who want the best quality money can buy...

SELF POLISHING WAXES

Candy's Supreme—Candy's Supreme Special AS
Candy's DeLuxe—Bright Beauty—Candy's Supreme Special WR
Candy's Supreme Special WR-AS—Candy's No. 640
Seven floor waxes that *are* all-around top quality for any given traffic condition. Each imparts the finest protection and beauty to floors for which they are best suited.

Bright Beauty FLOOR CLEANER

An outstanding material for removing even the heaviest wax film and dirt. . . . Brings neglected floors "back to normal." The *right* cleaning agent to insure the most efficient floor maintenance.

Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort and imparts a deep impressive lustre. Too, it permits *repeated repolishing* with a dry cloth saving reapplication time and again; truly a very economical polish of very highest quality.

Bright Beauty PASTE WAX

A paste wax that is properly blended and refined from excellent quality solids and solvents that produce the best drying time and thorough evaporation. A wax that is easy to handle, having "creamy" consistency and stability throughout its stocking and usage period.

Bright Beauty LIQUID (spirit) PREPARED WAXES

Complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each its own "Dry Cleaner," they keep a surface waxed with a superb protective coating necessary to many difficult surfaces such as certain floors (where adaptable) bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a Glass Cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanness to glass that is actually true in fact. Different in color only as Silver polish, it imparts a highly desirable lustre to all silver *without* abrasion and can even correct the abuses of scratchy, "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Basic advantages are freedom from "balling up," thus does not gather dirt and impregnate the floor with hard spots difficult to remove . . . also is free from dusty effects. Adds the protective quality to expensive ballroom floors that means more "floor-years" to users everywhere.

Bright Beauty Heavy Duty PASTE CLEANER

Really *cleans* and *scours* more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive quality, it frees almost every surface from all forms of foreign matter to perfection.

1. BEAUTY AND DURABILITY

should be considered together. Initial appearance is important, but for a waxed surface to remain beautiful it must be durable. Durability depends not only on resistance to the abrasion of traffic, but even more so on resistance to the collection of dirt and to discoloring traffic marks. Durability is really measured by how long the waxed surface maintains a nice appearance before the necessity of complete removal and re-waxing.

2. ANTI SLIP

qualities are necessary in a good wax as a matter of safety underfoot. This important quality does not necessarily require the sacrifice of beauty and protection which are the foremost original reasons for the use of a wax. Look for the proper balance—a wax film which is not excessively slippery yet which is not tacky and does not excessively collect dirt.

3. WATER RESISTANCE

is important, particularly when considering the possibility of wet traffic and the necessity for frequent damp mopping for the purpose of removing surface dirt. Overdoing this quality means greater difficulty in applying multiple coats of wax and may seriously increase the difficulty in removal when complete cleaning and re-waxing is necessary. Water resistance is important, but so is the quality of removability.

4. SOLID CONTENT

when expressed in percentage is not nearly as important as the *quality* of the solid content. When considering good quality, 12% of solids answers most needs for good planned maintenance programs. Two applications of 12% will give better results than one of 18%. However, the more concentrated material is useful for some programs of maintenance and particularly on "washed-out" floors, etc. Over-waxing should be avoided so that periodic complete removal will not be too difficult.

5. CARNAUBA WAX

is still the most important basic ingredient in our floor waxes. When refined and compounded with other important ingredients and "KNOW HOW," it aids materially in producing the most important features of a good floor wax... ALL AROUND QUALITY OF PERFORMANCE.

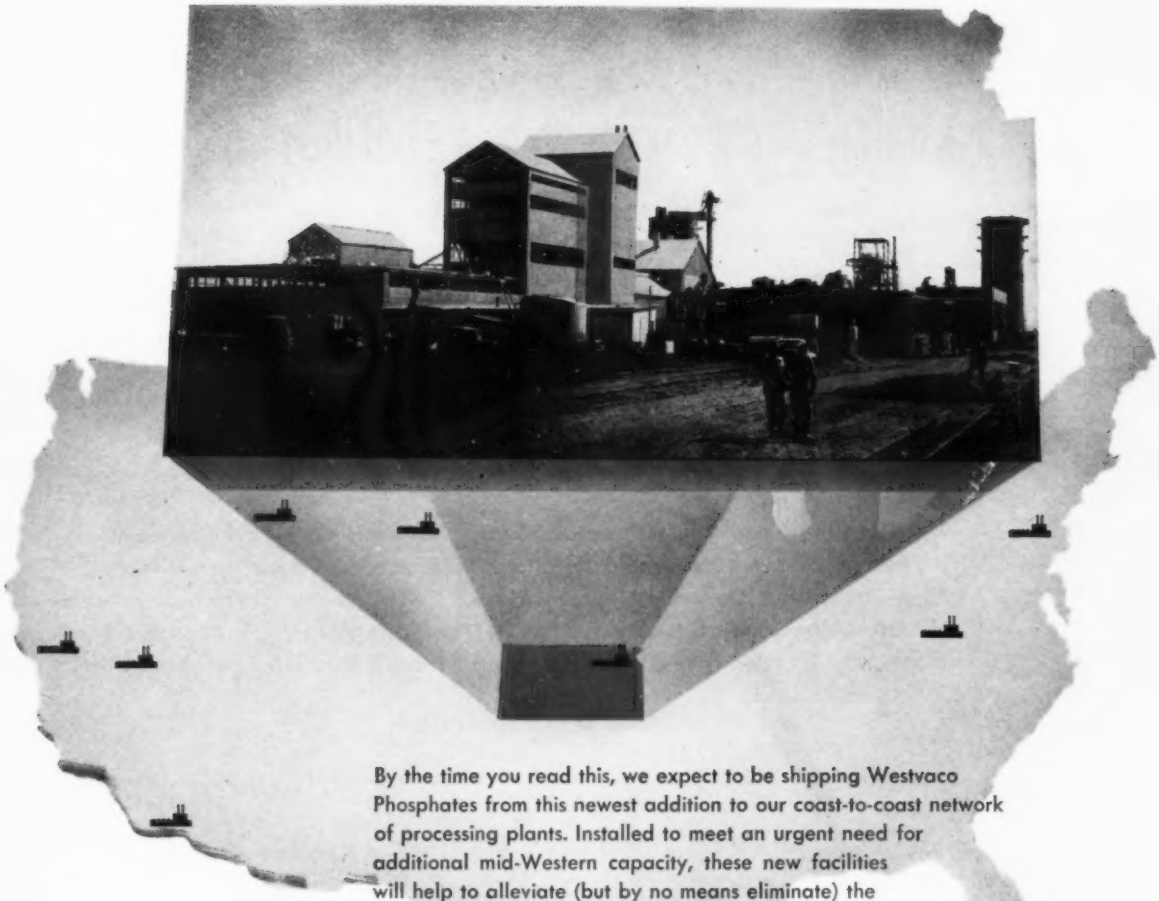
● **ALL AVAILABLE FOR PRIVATE BRAND ONLY**
We do not compete with our jobbers for consumer sales.
We sell only to distributors, except for experimental accounts in Chicago essential to research.

Wax Specialists for over 60 years

Candy & Company, Inc.

2515 W. 35th ST., CHICAGO

And now – new **Westvaco** *phosphate production in the heart of America at*
LAWRENCE, KANSAS



By the time you read this, we expect to be shipping Westvaco Phosphates from this newest addition to our coast-to-coast network of processing plants. Installed to meet an urgent need for additional mid-Western capacity, these new facilities will help to alleviate (but by no means eliminate) the continuing shortage of Sodium Phosphates.

Lawrence, Kansas is the latest step in a long range Westvaco program of plant additions and betterments. As recently announced, we have contracted the installation of a fourth electric furnace for the production of elemental Phosphorus at Pocatello, Idaho—making one a year every year since 1948!

While substantially all of our immediate production has been contracted, we will welcome an opportunity to discuss your requirements, if you can be most economically served on phosphates from Carteret, N. J., Lawrence, Kansas or Newark, Calif.; on Caustic Potash from South Charleston, W. Va.; on Natural Ash from Westvaco, Wyoming.

ALKALIS
CHLORINE
SOLVENTS
PHOSPHATES
BARIUM PRODUCTS
MAGNESIA PRODUCTS
AGRICULTURAL CHEMICALS
AND OTHER
INDUSTRIAL CHEMICALS

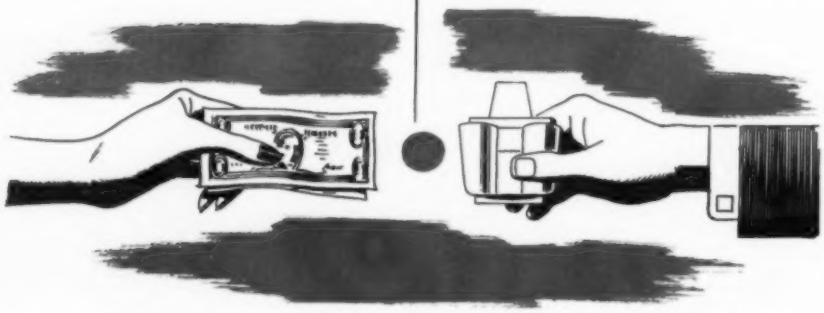
Westvaco CHEMICALS

WESTVACO CHEMICAL DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
GENERAL OFFICES • 405 LEXINGTON AVENUE, NEW YORK 17
CHICAGO, ILL. • CLEVELAND, OHIO • CINCINNATI, OHIO
ST. LOUIS, MO. • LOS ANGELES, CALIF. • NEWARK, CALIF.

fmc

Point of Sale

PROVING GROUND OF PRODUCT QUALITY



Here is a tried-and-true way to make your line even more *marketable* and *profitable* . . . use pure, stable Verona aromatic chemicals for your bases. Then your perfumes, creams, toilet waters or soaps will reach the point-of-sale . . . *proving ground of quality* . . . just as you made them . . . with their fragrances as flower-fresh and appealing as when they left your plant.

Verona specialties

amuskal	For freshness and life in your compound, add 1/10% to ¼% Amuskal. Produces natural Tonquin Musk effect.
ambre e-342	Add 2% to 3% of this characterful Ambre to produce the deep, sweet Ambre note for your perfume's appealing final effect.
opoponax ambre e-392	Indicated in fragrances of Oriental type; adds piquancy to the Ambre note. Use from 2% to 5%.
aldehyde e-317	Provides the top note to the first arresting fragrance. Add only ½% to 1% for surprising results.

cyclamal • rose e-131 • ionones • floranol

SOLE AGENT IN THE U. S. A. FOR J. & E. SOZIO, GRASSE, FRANCE

MOUSSE DE CHENE ABSOLUTE • MOUSSE DE CHENE BRUT
STYRAX • OLIBANUM • OPOPONAX • TOLU • RESINOIDES

VERONA AROMATICS DIVISION

VERONA CHEMICAL COMPANY • 26 VERONA AVE., NEWARK, N. J.

Tests show reduction of skin bacteria on hands with "DYSEPT" *containing hexachlorophene*

This new liquid soap perfectly meets the needs of surgeons, physicians, hospitals, clinics, restaurants—any application where it's important to maintain skin bacterial population at a minimum level. Independent laboratory tests demonstrate that convenient "DYSEPT"—with 5% hexachlorophene to the anhydrous soap content—is both bactericidal and bacteriostatic with continuous daily use. Charts show percentage reduction.

CHART No. 1. Percentage reduction in resident bacteria on hands with continuous daily use of undiluted "DYSEPT" for 4 consecutive days. Tests actually ran over 5-day period. "Zero" days represents bacterial population before use of "DYSEPT."

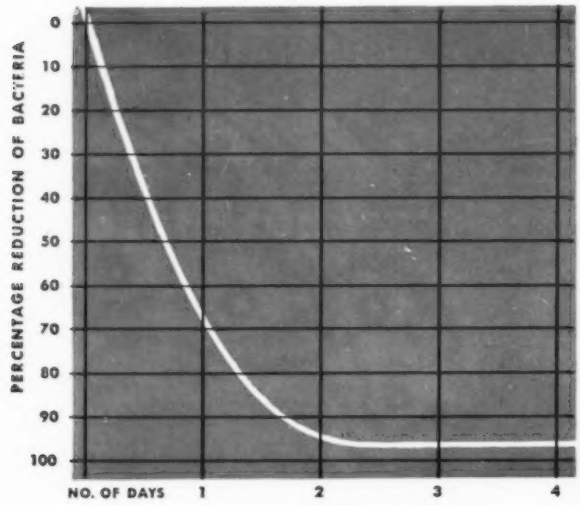
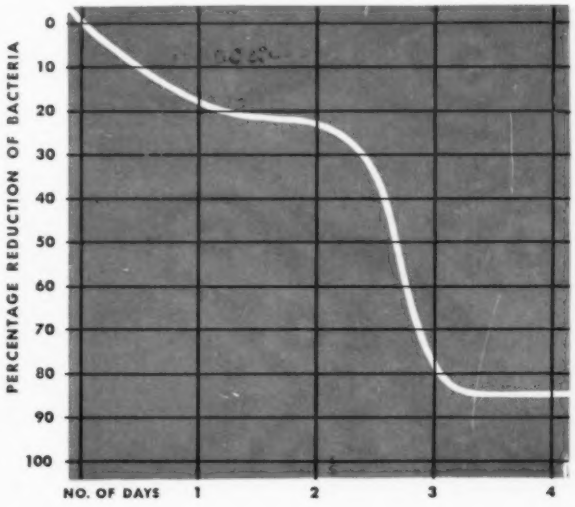


CHART No. 2. Percentage reduction in resident bacteria on hands with continuous daily use of "DYSEPT" diluted 1:1 with water for 4 consecutive days. Again, tests actually ran over 5-day period. "Zero" days represents bacterial population before use of "DYSEPT."



NOTE THESE FACTS ABOUT THE USE OF "DYSEPT"

"DYSEPT," containing 1% hexachlorophene to the total volume, leaves an invisible film not removed by rinsing which, with application one to three times daily for at least five days a week, reduces bacterial skin flora to about 5% of the usual amount and maintains that level. It has been found to reduce surgical scrub-up contact time with daily use. "DYSEPT" is non-toxic and non-irritating, and acts effectively even when diluted with water. A clinical brochure, with laboratory reports, suggestions for using and other technical data, may be obtained by mailing the coupon. "DYSEPT" is available through all Davies-Young distributors.

THE DAVIES-YOUNG SOAP CO.
DAYTON, OHIO

Also makers of

"DYSEPT" Hand Lotion
(containing Hexachlorophene)

MAIL THE COUPON FOR SAMPLE AND DETAILS

THE DAVIES-YOUNG SOAP COMPANY SSC-751
BOX 995, DAYTON 1, OHIO

Please send free sample of
- ☐ "DYSEPT" Liquid Soap and clinical brochure.
- ☐ "DYSEPT" Hand Lotion.

NAME_____

ADDRESS_____

CITY_____

STATE_____

Consistent uniformity of end product is essential to keep consumer markets. Maas consistent quality phosphates are always dependable, produced in the west by the west's oldest and largest phosphate producer. Each batch is tested for uniformity to insure uniformity in your end products.

A. R. MAAS CHEMICAL CO.
Division of Victor Chemical Works
4570 Ardine Street, South Gate, California

Be sure you pick the right one...

If you manufacture soft soaps for household use Woburn Soya Fatty Acids are the right ones for you...

Woburn Soya "S" Fatty Acid is a straight distilled vegetable fatty acid prepared from Soyabean type raw materials for liquid and soft soaps. You reduce processing and operation costs, because it saponifies to completion rapidly with no need for salting out.

SOYA "S" FATTY ACID

Specifications	Maximum	Minimum
Acid Number	202	194
Iodine Value (wijs)	130	115
Titre °C	30	24
Color (Lovibond 5¼")	5R	—
Moisture and Volatile	0.5%	—

Typical Composition	% Total Fatty Acids
Palmitic and Stearic Acids	24
Oleic Acid	24
Linoleic Acid	47
Linolenic Acid	5

Six advantages to using Fatty Acids

1. **Simplicity**
   The manufacture of soaps from Fatty Acids is not a difficult or complicated procedure.
2. **Better Color**
   Soaps of an excellent color are produced from Fatty Acids because foreign matter and dirt particles, present in the original raw oils, have been eliminated.
3. **Time Saving**
   The time of saponification is greatly reduced, since the glycerine is already removed, eliminating the need for a long "salting out" operation.
4. **No Shrinkage**
   The entire fat component goes into the soap with Distilled Fatty Acids, while with oil, at least 5% is lost in glycerine.
5. **Economy**
   Lower labor and equipment costs result, as well as a saving in steam, because the same volume of soap is produced in less time (or a much larger volume in the same time).
6. **Better Control of the Finished Soap**
   Fatty Acids allow for complete saponification with an excess of only about 0.12% alkali. Woburn's rigid control system assures the soap maker of a more uniform product as the starting point for manufacture.

WOBURN dependable PRODUCTS

WOBURN CHEMICAL CORP. (N. J.)

*Copyright—Woburn Chemical Corp. (N. J.)

It's always to your advantage to use Woburn Fatty Acids

There's a Woburn fatty acid for every soap need!

MAIL THIS COUPON TODAY

Woburn Chemical Corp. (N. J.)
1200 Harrison Avenue, Harrison, N. J.
Please send me, without charge, the Woburn Bulletin on Soya "S" Fatty Acid.

Name_____

Title_____

Firm Name_____

Address_____

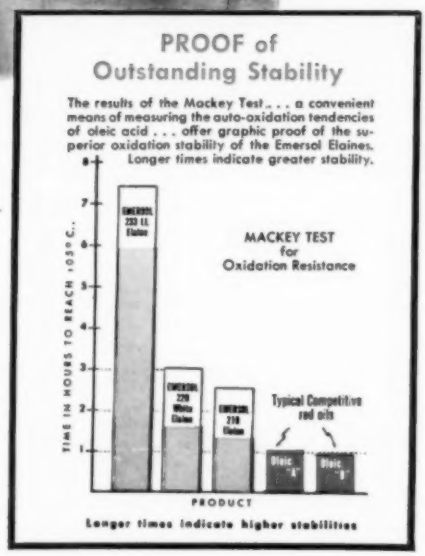
City_____ Zone____ State_____

Unpleasant Smell *never* helps a Product Sell!

EMERSOL OLEIC ACIDS Will Keep *Your* Products Fresh, Free from "Summer-Heat" Rancidity

Guard your products from unpleasant, unprofitable rancid odors during hot summer weather. Emersol Oleics resist oxidation better than *any* competitive red oils you can use! The superior stability of these Emery Acids is clearly demonstrated by the chart shown.

Be sure this summer and all year through . . . that your products will reach consumers as fresh and pure as when shipped. Do as more and more alert manufacturers are doing . . . *specify* and *insist* upon the extra stability and superior product protection of *Emersol Oleic Acids*. Your products will look better, keep better and sell better! Next time, buy Emery!


PROOF of
Outstanding Stability
The results of the Mackey Test . . . a convenient means of measuring the auto-oxidation tendencies of oleic acid . . . offer graphic proof of the superior oxidation stability of the Emersol Elaines.
Longer times indicate greater stability.
TIME IN HOURS TO REACH 1.0 P.V.
MACKEY TEST
for
Oxidation Resistance
Typical Competitive red oils
PRODUCT
Longer times indicate higher stabilities

Emery Fatty Acids

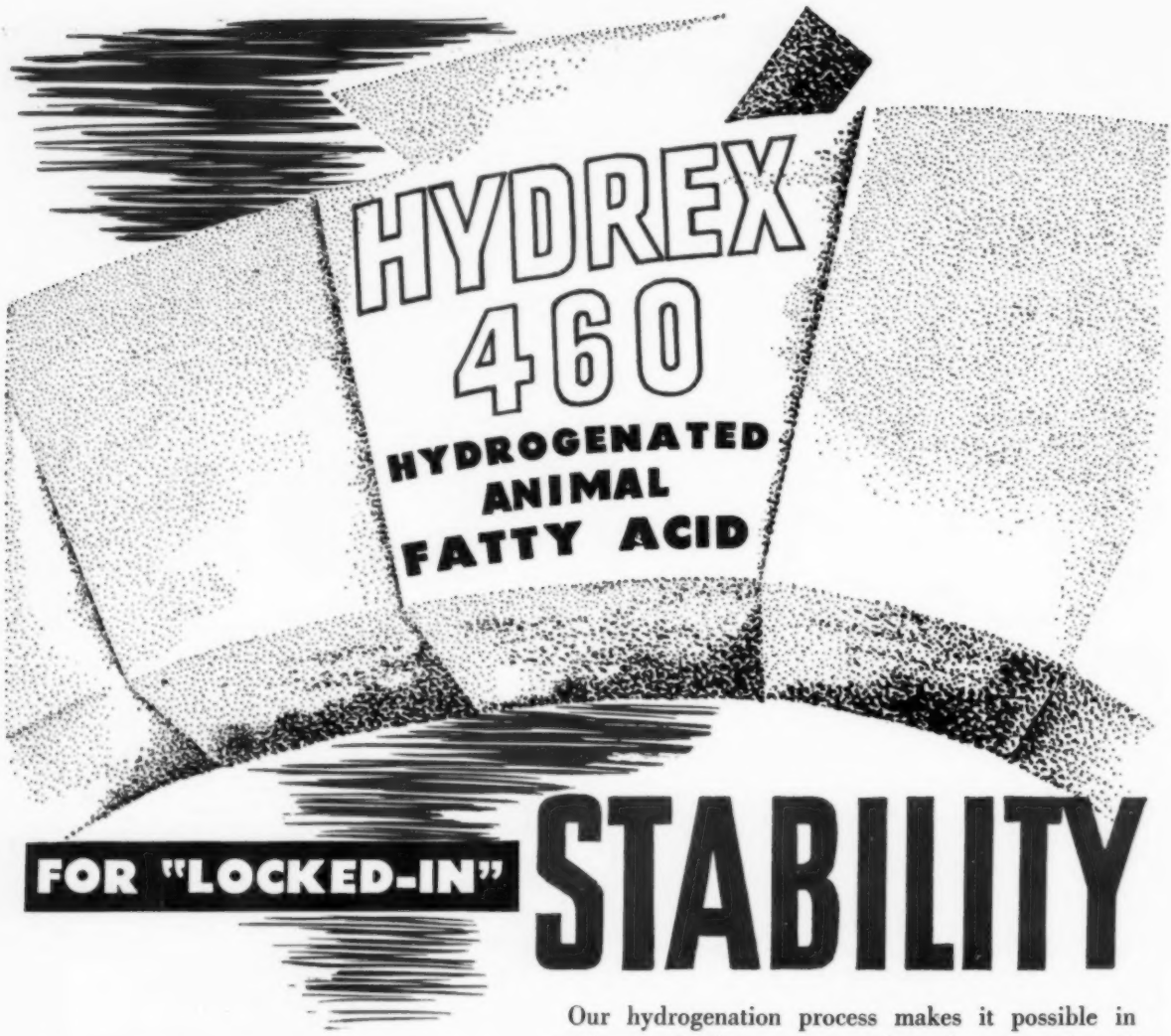
EMERY INDUSTRIES, INC.
Carew Tower, Cincinnati 2, Ohio

Branch Offices:
3002 Woolworth Bldg., New York 7, N.Y.
401 N. Broad St., Philadelphia 8, Pa.
187 Perry St., Lowell, Mass.
221 N. LaSalle St., Chicago 1, Ill.
420 Market St., San Francisco 11, Calif.
Export: 5035 RCA Bldg., New York 20, N. Y.

Representatives:
Schibley & Ossmann, Inc., 33 Public Square, Cleveland 13, Ohio
Ecclestone Chemical Co., 2673 Guoin, Detroit 7, Mich.

Warehouse stocks also in St. Louis, Buffalo and Baltimore

Now--shiny, safe floors
all year 'round with - -
SUPER SAFE
CETOX
Hydraoxated carnauba floor wax
- - It's all-weather-slip-proof!
Come rain or shine, radically new SUPER SAFE CETOX gives genuine security underfoot on dazzling, beautiful floors.
Super safe—even in inclement weather
Here's important protection all year long—especially throughout year's 30% inclement weather when the risk of slips and falls is greatest. Snow, sleet and rain tracked onto a waxed floor acts as a lubricant underfoot. SUPER SAFE CETOX ends this hazard. Foot traffic has solid, secure footing on a CETOX dressed floor . . . whether wetted or dry. You can't slip on SUPER SAFE CETOX, because the slip is chemically *hydra*oxated out of the raw material carnauba. No silicas or abrasives added! It's super safe! Because it's hydraoxated!
More remarkable features
SUPER SAFE CETOX quickly dries into a smooth expanse of brilliant lustre. Self-lustre CETOX resists soil, wear, spilled water and frequent damp moppings. In every way CETOX is superior! Send for sample and sales data on this nationally advertised profit-maker. Do it now!
SUPER SAFE
ALL-WEATHER
-SLIP-PROOF
CETOX
SELF-LUSTRE
HYDRAOXATED
CARNAUBA
FLOOR DRESSING
CHEMICAL SERVICE of BALTIMORE
SUPER SAFE, RAIN OR SHINE
Listed anti-slip floor treatment material by Underwriters' Laboratories, Inc.
Chemical Service of Baltimore
HOWARD & WEST STS. ★ BALTIMORE 30, MD.



FOR "LOCKED-IN" STABILITY

Our hydrogenation process makes it possible in regular production runs to reduce the proportion of unsaturated compounds to a minimum . . . greatly improving the stability of the fatty acid *and the end product.*

For example, Hydrex 460 Hydrogenated Animal Fatty Acid is a water-white, stable, saturated fatty acid that is relatively rich in stearic acid (about 70.0%), with about 30% palmitic acid and practically free of oleic acid. Yes, with our hydrogenation technique we are producing high melting point, low iodine value fatty acids with controlled composition. Manufacturers of fatty acid esters, metallic stearates, special lubricants and other products where *stability* is essential, should investigate medium-priced Hydrex 460 Hydrogenated Animal Fatty Acid.

HYDREX 460 SPECIFICATIONS

Titre	(134.6 — 140.0°F) 57.0 — 60.0°C
Color 5¼" Lovibond Column (max)	4 Yellow — 0.4 Red
Iodine Value (Wijs).	1 — 4
Free Fatty Acid (as oleic)	100 — 103%
Acid Number	199 — 205
Saponification Value.	201 — 207

W. C. HARDESTY CO., INC.
HARDESTY PRODUCTS ARE INDUSTRY'S KEYSTONE
ESTABLISHED 1926
41 EAST 42nd STREET, NEW YORK 17, N. Y.

FACTORIES: DOVER, OHIO TORONTO, CAN.

paper sculpture by porcher-ellis

THE WISDOM OF EXPERIENCE

assures NIALK* chemicals of the highest efficiency and uniformity for use in soap-making and in sanitary chemicals.

NIALK

Caustic Soda
Caustic Potash
Carbonate of Potash
Paradichlorobenzene

*Trade-mark

NIAGARA ALKALI COMPANY

60 East 42nd Street, New York 17, N. Y.

Liquid Chlorine • Caustic Potash • Carbonate of Potash • Paradichlorobenzene • Caustic Soda • TRICHLORethylene
NIAGATHAL* (Tetrachloro Phthalic Anhydride)

An Aromatic of Growing Interest

C·64

. . . TO WEAVE RICH PATTERNS IN FRAGRANCE!

Since its introduction as a Dow Aromatic Specialty, C·64 has successfully found its place in the perfume formulas of many manufacturers of Toilet Soaps, Cosmetics and Perfumery. C·64 also finds valuable applications in other industries where its ability to mask unpleasant product odors has paid big dividends to its users. C·64 is a powerful aromatic possessing a minty-camphorous odor suggestive of Patchouli. It is a very stable crystalline material which dissolves in all essential oils and alcohol, even when diluted. Write to us on your company letterhead for a working sample and further information. Address your inquiry to Bush Aromatics, Dept. AR 6.

BUSH AROMATICS

DIVISION OF THE DOW CHEMICAL COMPANY

629 Grove Street, Jersey City 2, New Jersey

Exclusive sales representative for SYNAROME in the United States, Canada and Cuba.

DOW

Built soaps and detergents do a better, faster job on white work when made with Hercules CMC-CT, unpurified cellulose gum. In tests, as little as 5% of the active detergent content increased soil removal and whiteness retention properties almost 45%, even after five washings.

CMC-CT also cuts materials costs. By reducing the active detergent needed, it allows generous use of cheaper neutral and alkaline builders. Let Hercules help you adapt CMC-CT to your needs. Send for technical information and testing sample.

MORE AND MORE CONSUMERS USE SOAP AND DETERGENTS MADE WITH HERCULES® CMC-CT

(UNPURIFIED CELLULOSE GUM)

HERCULES POWDER COMPANY Cellulose Products Dept., 961 Market St., Wilmington, Del.

CM51-9

....and finish fresh, too!

The development of a perfume that will stay fresh and unchanged throughout the shelf-life and use-life of soap products requires the technical know-how of master soap perfumers.

Van Ameringen-Haebler, Inc., will create the *ideal* soap perfume for your product, custom tailored and within your price limits.

MANUFACTURERS AND CREATORS OF THE FINEST PERFUME MATERIALS

Van ameringen · haebler, inc.

521 WEST 57th STREET
NEW YORK 19, N. Y.

MALMSTROM
NIMCO
BRAND
WOOL FAT & LANOLIN

Free-Flowing

POWDERED LANOLIN SOAP

Powdered anhydrous free-flowing lanolin soap is new. LANOMAL* (1 & 2) means easier, less costly "lanolizing" of powdered and cake soap.

LANOMAL is added by direct mixing, simplifying production blending.

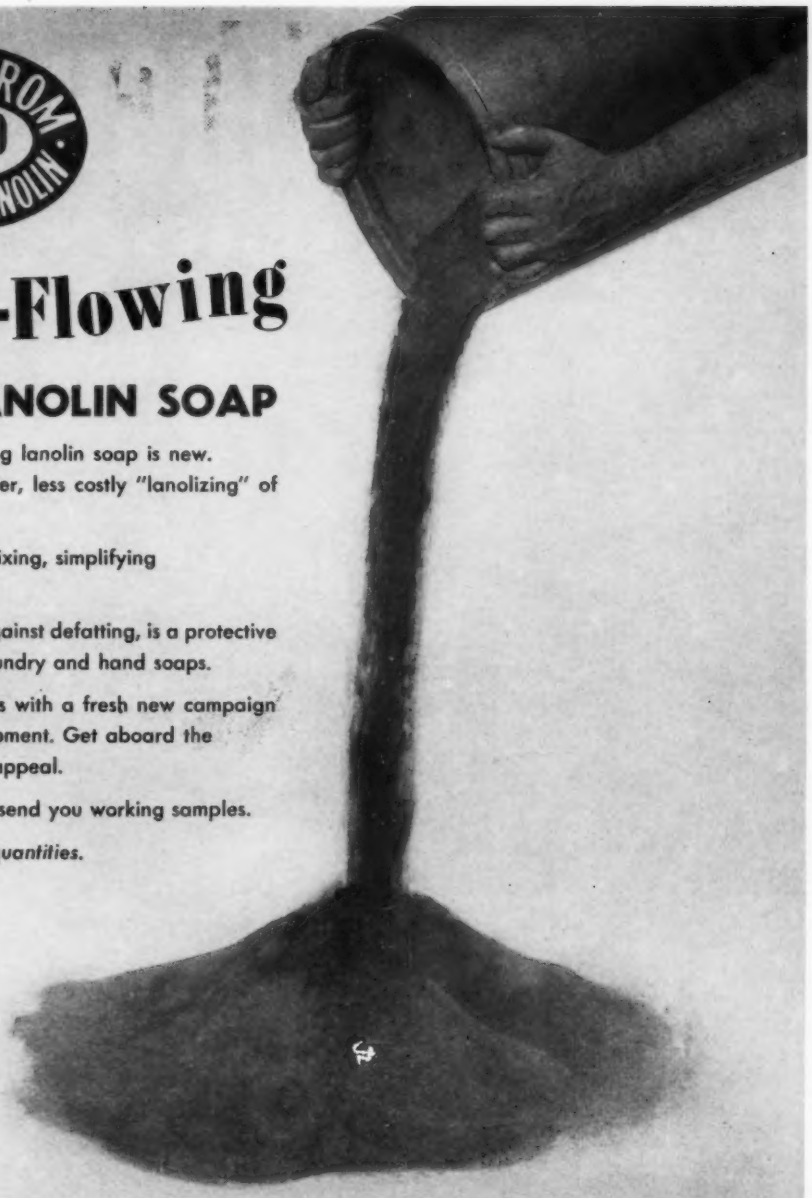
LANOMAL (1 & 2) safeguards against defatting, is a protective for those allergic to ordinary laundry and hand soaps.

Now is the time for adding sales with a fresh new campaign based on the LANOMAL development. Get aboard the driving force of proven lanolin appeal.

Call or write—we'll be happy to send you working samples.

Prompt delivery in commercial quantities.

*NIMCO POWDERED LANOLIN SOAP



Unretouched photograph of free-flowing powdered LANOMAL

TYPICAL ANALYSIS (WHEN PACKED)

LANOMAL SOAP #1 (POWDERED)		LANOMAL SOAP #2 (POWDERED)	
Lanomal Soap #1 is a prepared free flowing powdered product manufactured by blending 25% of Bentonite with 75% of "Lanolin Soap", with the following typical analysis:		Moisture	1%
Moisture	2.5%	Unsaponifiables (Lanolin Alcohols)	5%
Unsap. (Lanolin Alcohols)	34.0%	Sodium Soap	94%
Sodium Soap	63.5%	Combined Sodium Oxide	11%
Combined Sodium Oxide	7.8%	Saponified Lanolin Fatty Acids	83%
Saponified Lanolin Fatty Acids	55.7%	Free Alkali	None
Free Alkali	None	Ph. of 5% aqueous solution	9.5--10.0
Ph. of 5% aqueous solution	9.5--10.0		

Packing: 300# bbls. or fibre containers.

N. I. MALMSTROM & CO.

America's Largest Processor of Wool Fat and Lanolin

147 Lombardy St., Brooklyn 22, N. Y.

612 N. Michigan Ave., Chicago 11, Ill.

WHY PAY HIGH PRICES
FOR NATURAL ESSENTIAL OILS?

Change to... FELTON

ARTIFICIAL ESSENTIAL OILS

Economical! Available! Authentic!

- ABIES SIBIRICA
- ALLSPICE
- BERGAMOT
- CASSIA
- CEDAR LEAF
- CINNAMON
- CITRONELLA
- CLOVES
- GERANIUM
- LAVENDER
- LEMON
- LEMONGRASS
- ORIGANUM
- PATCHOULY
- PIMENTA
- PINE NEEDLES
- ROSE BULGARIAN
- SAGE
- THYME
- VETIVERT
- YLANG YLANG

AROMATICS · PERFUME BASES · ESSENTIAL OILS

FELTON CHEMICAL COMPANY, INC.
599 Johnson Ave., Brooklyn 6, N. Y.

PLANTS: Brooklyn, N. Y. • Los Angeles, Cal. • Montreal, Que. • Paris, France
SALES OFFICES: Atlanta • Boston • Chicago • Dallas • Philadelphia
St. Louis • Toledo • Toronto

Stocks Carried in Principal Cities

for DETERGENCY

It is effective on an unusually wide variety of soils. NYTRON has excellent power to remove oil and grease from fabrics, surfaces, metal parts. It cleans efficiently in cold, as well as warm or hot water and retains its detergent action when used in either acid or alkaline mediums.

for HARD WATER ACTION

NYTRON is more economical because increased quantities do not have to be added to compensate for water hardness; completely prevents the formation of scum, grease rings, streaks, spots.

for CHEMICAL STABILITY

Remains chemically stable over a wide range of temperatures, acidity or alkalinity.

for RAPID SOLUBILITY

NYTRON goes into solution almost instantly in hot or cold water and will not "salt out" in concentrated solutions of many acids, alkalies or metallic salts.

NYTRON

TRADE-MARK REG. U. S. PAT. OFF.

FOR PERFORMANCE

because ...

NO OTHER WETTING AGENT-DETERGENT MATCHES NYTRON'S COMBINATION OF PROPERTIES

for QUICK, THOROUGH RINSING

NYTRON rinses promptly and completely in cool or even cold water, does not leave an insoluble deposit.

for REDUCED WETTING TIME

Effectively lowers surface tension, even in extremely low concentrations. It improves the action of acid and alkaline solutions over a wide range of temperatures.

for FOAMING

NYTRON will foam in any normal concentration of acid or alkali, in distilled water or sea water, in ice cold or boiling water.

for IMPROVING PERFORMANCE OF SOAP

Improves quality and lowers cost when used to partially or completely replace high-priced soap.

A SOLVAY PRODUCT

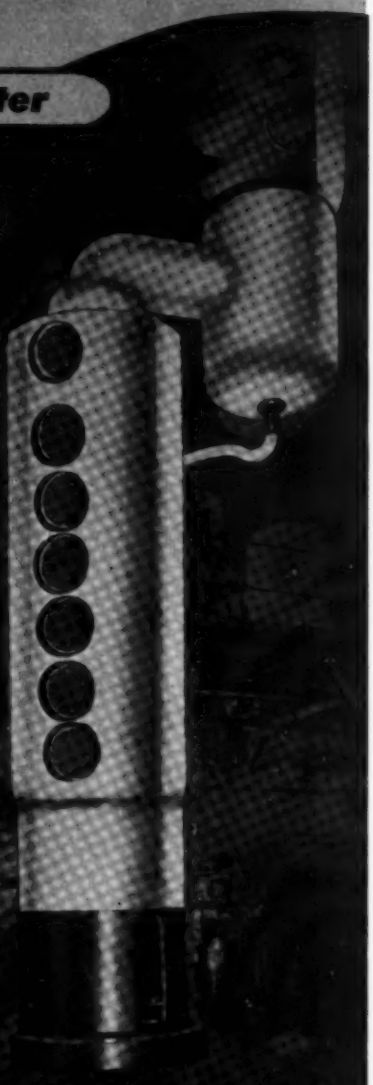
FREE SAMPLES...
MAIL COUPON

SOLVAY SALES DIVISION, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.
I want to know more about NYTRON, the Synthetic Organic Detergent with the exclusive combination of properties. Send me a free sample plus non-technical information and specific technical data.

Name_____ Title_____ Company_____ Address_____ City_____ Zone_____ State_____ SSC-7

Another A. GROSS fatty acid for better

products and processes!



Our springboard

to lighter colored

SOYA BEAN FATTY ACIDS

NOW you can have a Soya Fatty Acid that not only has an excellent initial color, but also maintains that color throughout all stages of ALKYD manufacture.

For less demanding applications, A. Gross & Company also has two other grades of Soya Fatty Acid at proportionately lower prices.

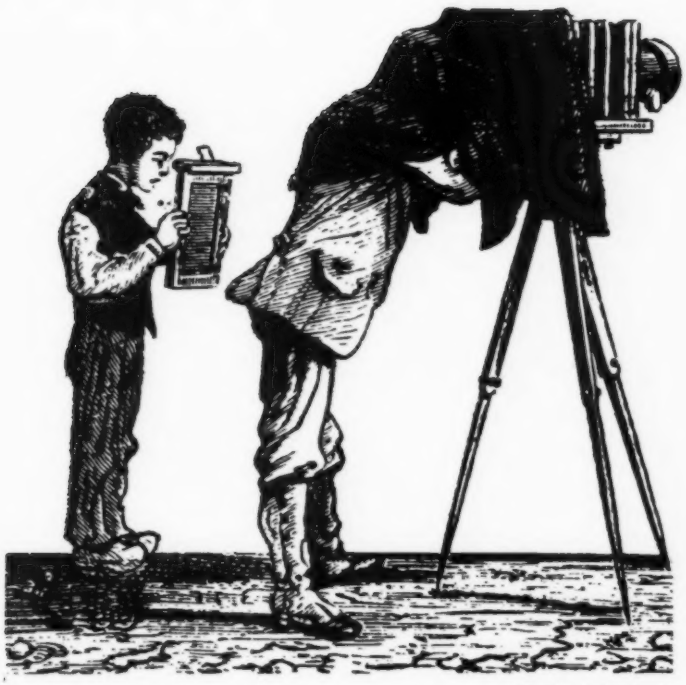
Prompt shipment of fresh material is essential and A. Gross & Company has geared its manufacturing and shipping facilities to offer such a service.

Distributors in Principal Cities

A. GROSS & Company

295 MADISON AVE., NEW YORK 17, N. Y.

manufacturers since 1837. write for samples and our new booklet "FATTY ACIDS IN MODERN INDUSTRY"



BETTMAN ARCHIVE

do you need a better FILM FORMER?

try METHOCEL *...a superior synthetic gum!*

Methocel (Dow Methylcellulose) has many uses for the soap and sanitary product manufacturer. An unusually fine film former, Methocel can be used to dispense soap in sheet form, such as soap papers and free films containing soap.

As a thickener, Methocel adds "body" to liquid soaps and shampoos. It is an excellent suds builder and thickener for synthetic detergents. In the production of many different polishes, Methocel is useful as both a binder and emulsion stabilizer. In any use, Methocel offers the advantage of being bland, physiologically inert, clean, stable in viscosity and uniform in its thickening properties.

Methocel, in the *powdered* form, is easier to handle in process and can be dry-mixed with other ingredients or added as a water solution. This chemical of ever-growing usefulness is easy and economical to use. If you have not yet tried it, write Dept. ME-127 for your free, experimental sample.

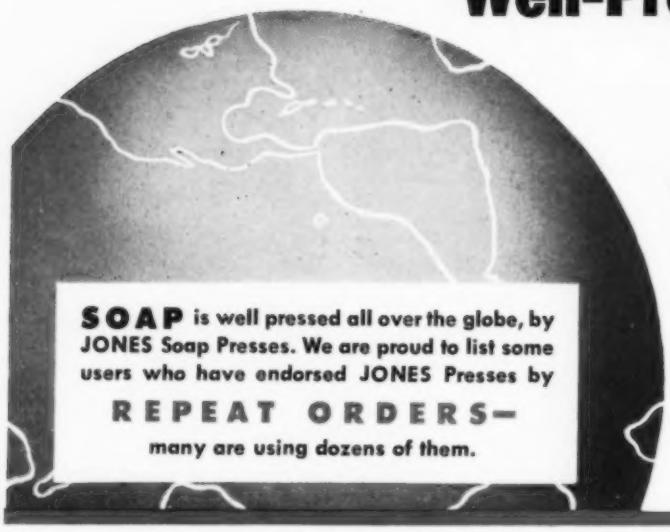
THE DOW CHEMICAL COMPANY

MIDLAND • MICHIGAN

DOW CHEMICALS

INDISPENSABLE TO INDUSTRY AND AGRICULTURE

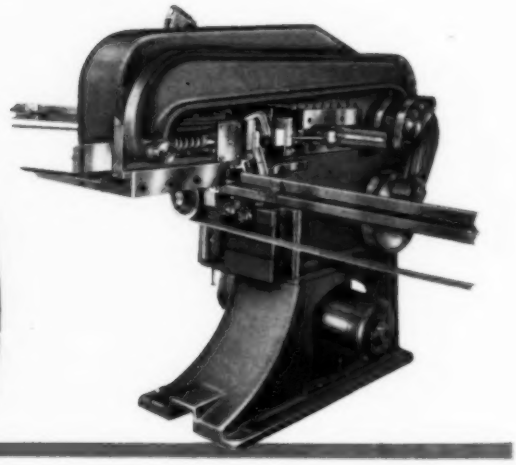
The SUN never sets on SOAP—
Well-Pressed by JONES!



SOAP is well pressed all over the globe, by JONES Soap Presses. We are proud to list some users who have endorsed JONES Presses by

REPEAT ORDERS—

many are using dozens of them.



ARMOUR AND COMPANY
B. T. BABBITT, INC.
J. BIBBY & SONS, LTD.
BOOTS PURE DRUG CO., LTD.
BOURJOIS, LTD.
T. F. BRISTOW & CO., LTD.
CANADA PACKERS LIMITED
CHICAGO SANITARY PRODUCTS CO.
COLGATE-PALMOLIVE-PEET CO.
COLGATE-PALMOLIVE-PEET, LTD.
COMPANIA INDUSTRIAL
CO-OPERATIVE WHOLESALE SOC., LTD.
CRUSELLAS Y COMPANIA
CUDAHY PACKING CO.
CUSSONS SONS & CO., LTD.
DOBBLEMAN, LTD.
DUBARRY S. A. C. I. F. I.
J. EAVENSON & SONS
DIVISION OF WILSON & CO., INC.
IND. JABONERA LA ESPERANZA
FELS & CO.
PERFUMERIA GAL, S. A.
GERARD BROS., LTD.
CIE. FRANCO-MAROCAINE D'HUILERIE ET DE SAVONNERIE
EDOUARD GOUIN & CIE.
HASKINS BROTHERS & COMPANY
THOMAS HEDLEY & CO., LTD.
THE HEWITT SOAP COMPANY, INC.
THE HOUSE OF "4711"
INDUSTRIAS UNIDAS DE NUEVO LAREDO, S. A.
IOWA SOAP COMPANY
KIRKMAN & SON, DIVISION OF COLGATE-PALMOLIVE-PEET COMPANY
LEVER BROTHERS COMPANY
LEVER BROS. & UNILEVER, LTD.
LIGHTFOOT SCHULTZ CO.
J. LINDAY & SON, LTD.
THE LONDON SOAP CO., LIMITED
LOS ANGELES SOAP CO.
MANHATTAN SOAP COMPANY
MENDOZA & CIE.
MIRA LANZA
MODI SOAP WORKS
MONSAVON—SOCIETE DES SAVONS FRANCAIS, S. A.
NEWELL GUTRADT COMPANY
THE ORFORD SOAP CO.
PALMOLIVE S. P. A.
PLOUGH, INC.
POTTER DRUG & CHEMICAL CORPORATION
PREMIER SOAP CO., LTD.
THE PROCTER & GAMBLE COMPANY
QUALITY PRODUCTS (PTY.), LIMITED
W. T. RAWLEIGH CO.
RHODESIAN INDUSTRIES CO., LTD.
RIT PRODUCTS COMPANY
ROGER & GALLET
I. ROKEACH & SONS, INC.
SALVADOR ALVAREZ
SAVONNERIE PARFUMERIE DUBOIS FILS
A. SAVY, JEANJEAN & CIE.
SCOTTISH CO-OPERATIVE WHOLESALE SOC., LTD.
STAHL SOAP CORPORATION
JOHN T. STANLEY CO., INC.
THE SWASTIK OIL MILLS, LIMITED
SWIFT & COMPANY
TATA INCORPORATED
THE J. R. WATKINS COMPANY
J. B. WILLIAMS CO.
WRIGHT, LAYMANN & UMNEY, LTD.
C. W. YOUNG & CO.

R. A. JONES & COMPANY, INC.

Cartoning Machines — Soap Presses

P. O. BOX 485
CINCINNATI, OHIO

AS THE EDITOR SEES IT

THE anti-trust probe of the soap industry continues apace at Newark, N. J. Leading soapers recently protested via affidavits against federal subpoenas of their records stating that such records as wanted by the federal grand jury would fill several trains of box cars. One large company pointed out that its records would have to be shipped from five different cities and would occupy 283 freight cars. Another stated that the required records would weigh about 165 tons. And, it was added, these latter records alone would take one person 594 years to read and examine. That these subpoenas give something of a ludicrous slant to the entire proceeding is quite obvious. Were it not likely to be a serious and expensive matter for some soapers, it might be almost funny.

Probing in and around the soap industry in search of anti-trust violations is not a new pastime. Taking a sock at the soap industry is old stuff among politicians who want to get their pictures in the papers. They have done it for years and still do. As far back as seven or eight years ago, none other than Senator Estes Kefauver, then a congressman, was quite interested in the possibilities of a "soap trust" and looked into the matter. In fact, among those with whom he discussed the subject was the writer of this piece. But, Mr. Kefauver apparently did not find what he sought, and went on to much greener pastures. His subsequently televised "crime circus" made any possible joust with the "soap trust" just so much peanuts.

Now, we are back again to another anti-trust probe of a long list of soapers and some of their suppliers. After watching the sale of all kinds of soap at rather close range for over twenty-five years, we wonder who and what are behind this latest investigation. Having seen bitter and unremitting competition year after year throughout the industry, we are trying to discover where anti-trust violations could fit into the picture. Having seen some of the largest soapers take inventory losses of millions of dollars time and again, we wonder if such would happen if there were a trust. Having seen the big fellows slashing at each others throats with advertising, coupons and cut prices, we have been amazed at times that they made any profits at all. And having seen innumerable small soapers prosper and grow in the midst of this eternal competitive dog-fight, we are puzzled more than ever by the current probe.

Surely, the Department of Justice, if it truly is the prime mover in this investigation, must have some concrete evidence. Or, is it, as has been intimated, another fishing expedition? The FTC castile case some time back took over seven years to go through the courts. If soap company records are examined in detail and become a part of this latest probe, it well could take seventy-seven.

WHEN the rollback of beef prices first was announced some weeks ago and some cattlemen vowed they would ship no more animals to market until it had been rescinded, potential trouble was spelled out for the soap industry in two words, "no tallow." Without beef there can be no tallow and without tallow no soap.

Faced with this prospect of short supplies, then, it might well have been expected that tallow prices would rise sharply. Quite the reverse situation has resulted, however. Tallow prices, which had been declining for some time when the beef rollbacks were first announced, have continued to decline, falling to the ten cent area, the lowest tallow figure since the pre-Korean period.

The explanation which market experts give is that it is very difficult and normally unprofitable

to hold cattle off the market when they are ready for slaughtering. So, though cattle raisers may want to "strike," it is uneconomic for them to do so. In spite of government price meddling, then, the short term prospect at least seems to be for adequate tallow supplies for the soap industry.

THAT synthetic detergents in sewage waters have become a headache for sanitary engineers has been known for some time. But, the problem now is getting into the newspapers. When this takes place, almost anything can happen as experience has shown on numerous occasions. The story of what happened at the sewage disposal plant of a small Pennsylvania city following a sampling campaign for a well-known detergent is now being repeated in the newspapers. One of New York's treating plants, handling the sewage from an almost wholly residential section of the city, is reportedly being overwhelmed by foam which has been declared due to the ever increasing use of synthetics in the home.

The simple solution of the problem, of course, would be to convince the housewife to use nonfoaming detergents. But that, in our humble opinion, would take an awful big pile of convincing. The soap industry over the years has sold her so completely on the idea of "rich, foamy lather" that she would be a tough cookie to unsell. So it looks maybe like the sanitary engineers are going to have to solve the problem from their end whether it be chemically, physically, or by political hocus-pocus. That some eager-beaver politician might try to introduce legislative bans on synthetics is always a possibility, but right now remote. Only the sewage-disposal boys are having trouble, and after all, they are not too numerous on the voting rolls.

Because the very properties which make synthetics effective detergents under certain conditions are the same properties which cause trouble in the sewage plants, the problem is not going to be too easy to solve. But solved it will be in time, we are quite certain. And not by unselling Mrs. McGuff on the idea of a nice foamy lather.

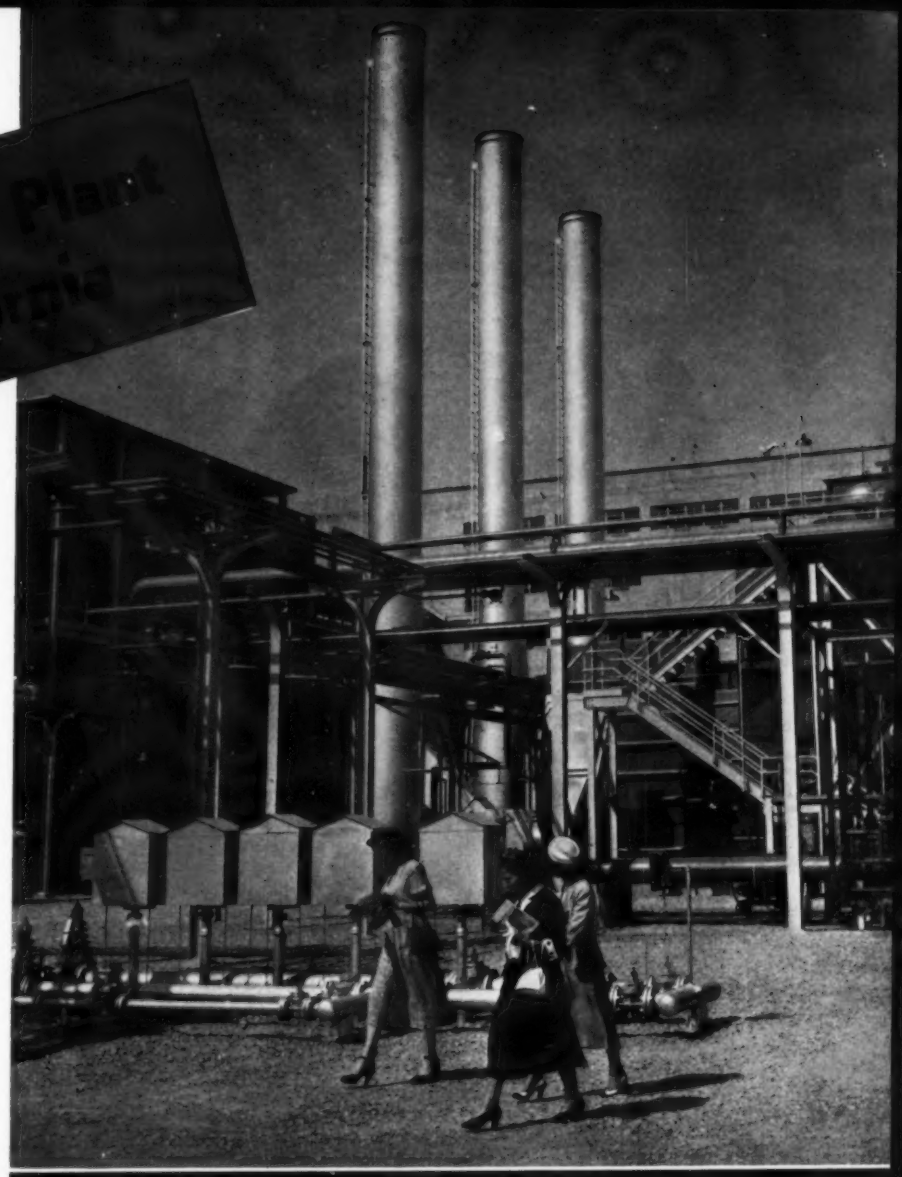
A word of warning to the casual reader of a "List of Basic Materials and Alternates" issued recently by the National Production Authority of the U. S. Department of Commerce. Purchasers of chemical products shown on the list, which attempts to "indicate the relative availability of the more important materials as a guide for procurement and substitution for the Armed Services, government agencies and industry", may be puzzled by the list. For example, in one place "detergents synthetic" are listed as "in tight supply" (Group II-B), while in Group III-B, "Chemicals in fair supply" "synthetic detergents" also appear. Soap is similarly indicated as being "in fair supply" and is recommended as an alternate for products in Group I (in very short supply) and Group II. Similarly, "dichlorobenzene-para" appears in Group I, while "para dichloro benzene" shows up in Group II. Pyrethrum, which is very short, is reported in the list to be in "fair supply", and DDT, which is virtually impossible to come by, is rated in Group II as in tight supply.

While revisions of the list are planned, and may explain conflicting listings and correct errors, which alert buyers will be quick to spot, the list tends to confirm where confusion is generated. It does nothing to elevate our confidence in the group attempting to manage our economy.

HOW to keep prices of soaps and detergents up rather than down seems to be the major problem in the soap industry at the moment. Talk of ceiling prices and price controls to contain inflation seem pretty academic when the price of the soap maker's principal raw material, fats and oils, has slid down almost 80 percent, in some cases, from the levels reached earlier in the year. Already there is talk of price cuts, with a few lowerings on some items, and increased couponing and other forms of promotion that for all practical purposes amount to price reductions.

Whether or not the downward trend will last is not clear. Increased rearmament expenditures, the full force of which has not been felt as yet, should serve to check the drift lower, but the talk of peace in Korea and other factors give the immediate outlook a decidedly bearish tinge.

New Lever Plant in California

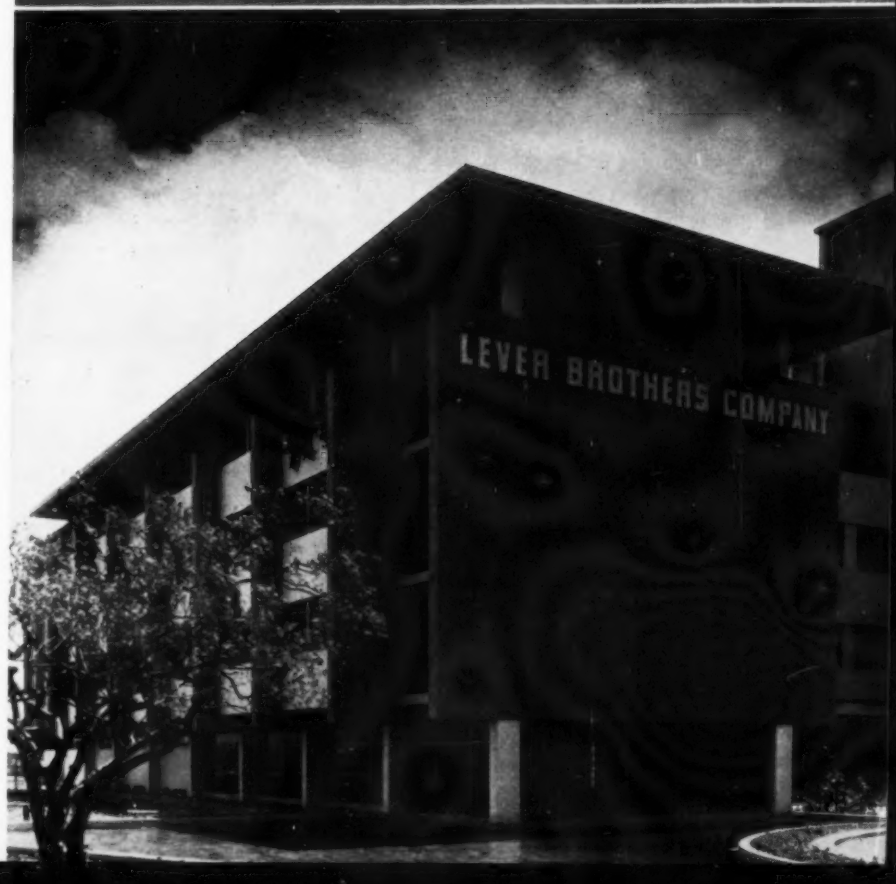


Upper right: Opening day guests passing boiler house with its three huge stacks. Lower right: Five story office and laboratory building at new Los Angeles plant, which is typically Californian in design, function and color, features reflecting pool, foreground, which extends under lobby. Plant grounds are extensively landscaped with grass, ivy lawns, shrubs, flowers, trees, etc.

THE new $25,000,000 soap, synthetic detergent and shortening plant of Lever Brothers was opened June 19 in Los Angeles. It is believed to be the most modern soap and detergent plant in the world and its completion is believed to make Los Angeles one of the top soap producing areas in the U. S.

The plant, which is said to represent the largest industrial investment made by a private business in the history of Los Angeles, is composed of six major buildings and facilities occupying one-third of a 30-acre plot, eight miles east of downtown Los Angeles. It will turn out virtually all of the products made by Lever Brothers.

All of the eight men members of the board of directors of Lever Brothers Co. were present for the opening ceremonies, which included a tour of inspection by invited guests, friends and families of employees and the builders of the plant, government officials and industrial and community leaders. In addition to Lever board chairman, John M. Hancock, who is a partner of Lehman Brothers, New York, and Jervis J. Babb, Lever president, six other Lever directors took part in the ceremonies. They were: Franklin J. Lunding, chairman of the Lever executive committee and chief executive officer of Jewel Tea Co.; William H. Burkhart, Lever production vice-president, under whose direction the plant was constructed; J. Laurence Heyworth of the parent com-



pany, Lever Brothers & Unilever, Ltd., who came from London for the opening ceremonies; Charles A. Massey, president of Lever Brothers, Ltd., of Canada; Robert B. Smallwood, president of Lipton Tea Co.; and E. Lee Talman, Lever administrative vice-president. Also present was Unilever director F. D. Morrell.

The plant is typically Californian in design, function and color, with much of the processing equipment located out of doors, taking advantage of the favorable climate. Scientific safeguards eliminate smoke and odors and special water conservation equipment is employed.

Manager of the plant is Charles T. Atwood, with 21 years of experience in soap and shortening manufacture with Lever Brothers.

All of the buildings are constructed of reinforced concrete and steel. The center of the plant consists of a four-story office and laboratory building flanked by a five-story finishing and packing building on the east and a six story shortening products finishing building on the west. Stair towers are used to connect the office building with the two product finishing buildings.

The soap and shortening finishing and packaging buildings are of conventional flat-slab construction. Special form work was used on the front elevations to give a fluted effect to the exposed concrete finish. Directly behind the main buildings and connected to them by two 87-foot clear span bridges at the fourth floor levels are the processing buildings for soap and edible oils. Separating the two processing buildings are the boiler plant and refrigeration units.

The other service units, consisting of a large hydrogen generating plant, tank farms, water tower, cooling waters and fuel storage, are located at various points to the rear of the site.

The present manufacturing center provides more than 415,000 square feet of floor space (approximately 10 acres) and the site has been laid out to permit expansion of the manufacturing facilities and the construction of a future warehouse 185,000 square feet in area.

When the plant was on the drawing boards of the builders, work was already under way by Lever safety engineers to incorporate in the buildings and on machines and equipment the latest advanced devices and safeguards to protect the employees and property. Safety, as a result, has literally been built into the plant. Hundreds of preventives of unusual and normal hazards causing industrial accidents range from intricate electric fire detection controls on the huge 85-foot "Rinso" and "No-Rinse Surf" towers to ladders with slip-proof treads instead of round rungs. The concrete floors in the manufacturing buildings were installed with special abrasives added to minimize the danger of uncertain footing for workers.

To help maintain the health of employees a well-equipped and staffed medical service, comprising reception room, nurse's office, first-aid room, doctor's office, two examination rooms, two rest or treatment rooms and a small laboratory, is available. It is on the first floor of the office building, a central location. The unit is under the supervision of Dr. John R. Howard, assisted by Dr. Leon A. Knight and two registered nurses. The medical service, like that in eight other Lever plants, is directed from company headquarters in New York. Medical procedure calls for close cooperation with private practitioners, community facilities and the State Workmen's Compensation Board. The medical program emphasizes a complete preventive medicine program.

A research control laboratory fully equipped with the latest analytical instruments and staffed by scientists and technicians is located on the third floor of the office buildings. Here hundreds of tests and controls are performed, beginning with incoming raw materials and supplies and continuing through the entire processing of the products.

The laboratory includes 15 rooms covering 12,400 square feet of floor space. The ceiling is soundproofed and the floor has rubber tile. In addition to the air-conditioned work rooms for the laboratory staff, the facilities provide report writing, library and shower rooms. It is in charge of a chief chemist with many years' experience with Lever in other plants and the central research laboratories in the East. A staff of 21 chemists will work in the Los Angeles plant.

The plant has many other facilities, in addition to the health clinic, for the comfort and convenience of the employees. A large, attractive, air-conditioned cafeteria is located on the fourth floor of the office building. Meals are served at low cost from menus prepared with nutritional guidance by the plant medical director. Rest and locker rooms, all with eye-appealing color schemes, have also been installed for the employees in the office building and other parts of the new plant.

The general offices on the second floor cover 4,000 feet of space. Equipped with modern desks, chairs and machines in special color combinations designed to make office work less fatiguing, the offices have fluorescent lighting, sound-proofed ceilings and wide picture windows.

Captions for Photos on Facing Page

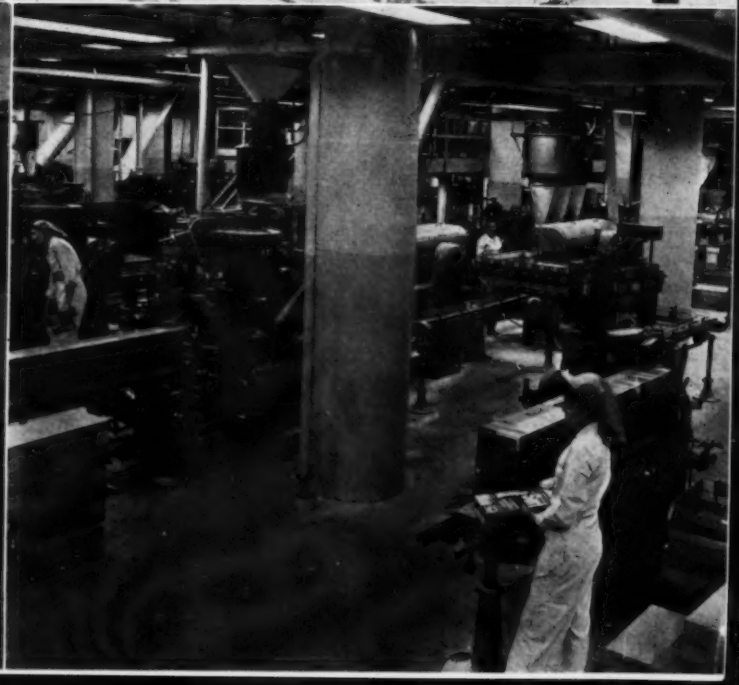
Upper left: Kettle room has 10 kettles, each of which yields about 170,000 pounds of soap per boil. Spray towers, 80 feet high (upper right) for "No-Rinse Surf" and "Rinso" dwarf plant visitors. Women working on production lines (center left) have specially designed uniforms. Safety regulations require covering their hair with green ski-type caps, worn in combination with canary yellow uniforms.

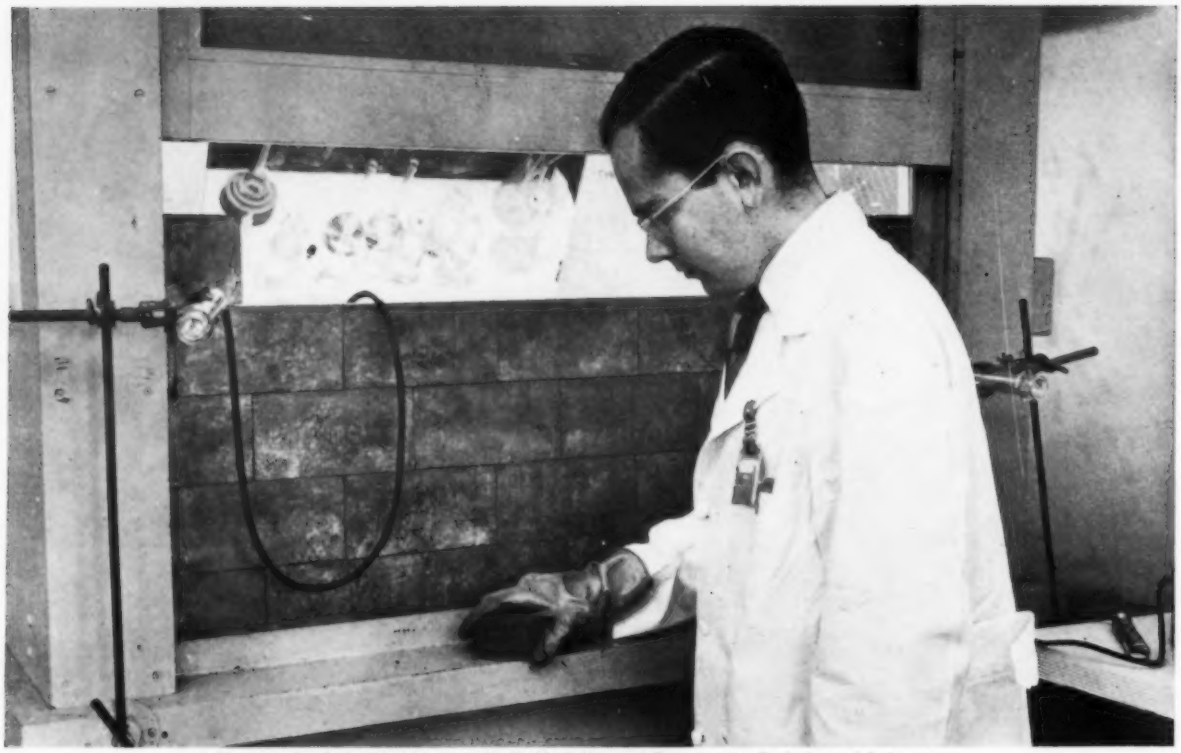
Aerial view (center right) showing the entire Lever installation of six major buildings on the 30-acre tract at Anaheim-Telegraph Road and Washington Blvd, east of Los Angeles. In center is five-story office and laboratory building, flanked on left by five-story soap and detergent finishing building, and on the right by six-story shortening finishing building. Separate processing buildings for soaps and shortening are located to the rear of each of these buildings.

Lower left: visitors passing edible oil storage tank outside the edible processing building and (rear) finishing building.

Women operators (lower right) package Lever products with the aid of almost completely automatic machines. This is a general view of the "No-Rinse Surf" packaging department.

Rinso
Rinso
Rinso
Rinso
Rinso
Rinso





Cleaning lead shielded hood in N. Y. U. College of Engineering Radiological Laboratory.

Cleaning Contaminated Surfaces

Newest application for synthetic detergents: Cleaning radioactive contaminated surfaces.

By D. H. Ross
Solvay Process Div., Allied Chemical & Dye Corp.

THE fission of the atom has created an entirely new concept of dirt, or contamination. The new stuff that we must deal with differs from ordinary dirt in several respects. Nuclear radiations from split atoms are invisible and cannot be detected by ordinary means; they cannot be seen or felt. They may take the form of submicroscopic entities known as alpha particles, beta particles or neutrons; or they may be very short electromagnetic waves known as gamma rays which are similar to X-rays. Each of these radiations is different but they all can react on individual cells in the human body causing illness or death (1).

Radiations most frequently encountered outside of the primary reactors (atomic "piles") come from radioisotopes of which over 11,000 shipments have been made since 1946. These have a total radioactivity equivalent to two pounds of pure radium (only three pounds of radium is under human control in the entire world) (2). These radioisotopes are used in research and in medical diagnosis. The hazardous radioactivity may result from radioactive gas, airborne radioactive particles either solid or liquid or mechanical transfer to walls, floors, working areas or equipment and hand tools in laboratories and other places using radioisotopes. In some cases stainless steel tools have been so badly contaminated as to defy removal by acids or strong alkalies. The removal of this invisible lethal dirt like the removal of infectious bacteria may be a matter of life or death. Effective control is therefore a must.

It is significant that in studying methods of laboratory construction the workers at Oak Ridge National Laboratory searched for types of surface from which radioactive material could be removed most easily (3). This is quite a departure from past methods where the surface properties of an object (e.g. a wall) were fixed by other requirements, with changes in cleaning efficiency falling entirely on the shoulders of the cleaning agent. The logic of the Oak Ridge approach is apparent. Most of us in our daily contact with various surfaces such as wood, metal, paint, ceramic, and plastic are familiar in a general way with the relation between porosity of the surface and the ease with which it can be kept clean. But it has taken invisible dirt in the form of radioactive particles to demonstrate most clearly that the contaminant, the surface, and the cleaning agent are

inseparable and interdependent variables.

As the result of several studies it is now generally agreed that the type of surface best suited for use in laboratories handling radioactive materials should have the following properties (3):

1. Smooth and non-porous (minimum absorption area and penetration).
2. Nonionic (minimum exchange).
3. Resistant to corrosion by acids, alkalies and solvents.
4. Resistant to heat.
5. Easy to install and remove.

Some of these criteria have been encountered previously in milk plants, pharmaceutical laboratories, and the like and it might be expected that glass, lead, or stainless steel would meet the new demands. The difficulty is first in the adaptation of a suitable surface for entire rooms instead of isolated pieces of equipment and second in the degree to which a surface is non-porous. By radioactive standards even a polished stainless steel surface can be rough enough to entrap radioactive particles which defy removal even with strong reagents. Fortunately, recent tests (3) have shown that for many purposes special plastic coatings offer surfaces more responsive to cleaning (decontamination) than glass, lead, or stainless steel. The importance of this is incalculable to anyone who has been contemplating building his laboratory out of sheet lead or plate glass. It now seems feasible to adapt standard laboratory rooms to special nuclear research centers by the use of surface coatings that can be easily decontaminated. Details of the way in which these coatings are applied has been reported elsewhere (3).

The preservation of the surface in its original impervious form is of paramount importance in the maintenance of a non-hazardous environment. Therefore, the selection of a detergent and the cleaning technique must receive extraordinary attention in order to avoid softening, scratching, or abrading the surface coating. Contamination and surface erosion go hand-in-hand. Therefore, the detergent must be neither highly acid nor alkaline and must incorporate good soil removing and dispersing properties without the aid of harsh abrasives.

Some of the newer synthetic detergents are the only materials which can meet these requirements satisfactorily. For example, "Nytron"* (one of the group of products which showed-up well in the Oak Ridge tests) is known to be an excellent cleaning agent for painted surfaces when judged by practical tests or by laboratory evaluation such as the Navy Bureau of Ships Specification 51C20. In addition to high cleaning efficiency, the detergent, with a pH of 8.5, is an extremely mild one which is essential to minimizing attack on paint films. The good detergency is due to an important combination of properties:

Wetting and Penetrating Action, which permits the detergent solution to penetrate better between the radioactive contamination and the painted surface.

Surface tension depressing action—Good surface active agents of the alkyl sulfonate type lower the surface tension of water from 72 dynes per cm^2 to about 30 dynes per cm^2 This effect is related to wetting but is not synonymous with it.

Solubility — Alkyl sulfonates are rapidly and completely soluble in water of any temperature up to saturation concentrations with increasing temperature. These far exceed those needed for good detergency. This means that workable cleaning solutions can be prepared in cool water thereby avoiding possible destruction of the paint surface with other solutions which can work only in hot water.

Effect of high salt concentrations—These detergents have shown high solubility in the presence of inorganic salts. In most instances such an effect is desirable in hard water areas where precipitation of calcium and magnesium salts is troublesome. In decontamination of radioactive surfaces the uniquely high solubility of the alkyl sulfonate is favorable to its use in the presence of high concentrations of inorganic salts (6).

High efficiency—By this we mean the ability to produce good results at low concentrations. Many people of good intention apparently reason that if one unit does a good job, ten units will do a ten-times better job. Unhappily the job may be ten-times worse. In the Oak Ridge test program a 0.1% alkyl sulfonate solution produced results equal to a 1.0 wt. % solution.

Non-corrosive—The alkyl sul-

* Trade mark of Solvay Sales Division, Allied Chemical & Dye Corp., New York.

Checking a previously cleaned area with a Geiger Counter.
(Photograph taken at New York University College of Engineering Radiological Laboratory.)

fonates are not only non-corrosive but in at least two fields (4, 5) have the property of inhibiting the attack of other agents on the surfaces with which they are in contact.

Alkalinity Affects Surface

As mentioned above, the alkalinity of a cleaning solution controls to a marked degree the rate and extent of its attack on painted surfaces. This effect has received scant attention until recently, due possibly to the lack of durable surface paints, and the lack of suitable detergents which could clean in any other way except by removing a layer of paint with the dirt. This action is illustrated in an experiment using painted panels which were washed daily with detergent solutions of varying pH. The amount of injury to the painted surface and the rapidity with which it appeared bear a direct relation to the pH. of the solution as shown in Figure I. Analogous studies of cleaning ceramic surfaces have been made by others with similar results (6). It is fortunate that both surface coatings and synthetic detergents have reached their present stage of development, for without them the design of nuclear research laboratories might be quite complicated.

In most cases radioactive particles are attached to the laboratory surfaces in the form of dust or moisture which can be removed easily by normal detergent action. In some cases, however, certain spots, for example, on a floor or work bench, may remain radioactive after the routine washing operation. Best practice requires the use of mechanical action and a very mild abrasive polish to irradicate these isolated spots. This technique is akin to the dry cleaner who cleans an entire suit with a mild hydrocarbon solvent and then removes residual stubborn stains with special reagents. Neither case requires that the entire area be subjected to the action of a cleaner capable of removing all traces of stubborn soil, for to do so would result in irreparable damage.

With a recognition of the few simple principles set forth in the foregoing paragraphs, the preparation of a hazard-free nucleur research laboratory should present no problem. A suggested maintenance program should incorporate the following:

1. Preparation of an easily cleaned surface using the special coatings and methods suggested by the Oak Ridge laboratories.
2. The use of detergent cleaning solution ("Nytron" at 0.1 wt. % is considered satisfactory) at regular intervals to be determined by Geiger-Mueller monitoring in order to keep exposure to under 0.3r per working day.
3. Monitoring immediately after washing.
4. Irradication of isolated contaminated spots by mechanically rubbing with a mild abrasive polish (i.e. surface removal by a suitable means).
5. Stripping and refinishing of any surfaces or pieces of equipment which do not respond to above treatment.

So far in this discussion we have dealt only with methods of cleaning laboratories using radioactive isotopes for research. However, the principles involved are quite basic and the cleaning techniques subject to much broader application. The most obvious and significant extension is to the civilian defense program. The importance of cleaning has been mentioned in the motion picture, which is being distributed to inform the populace on safety measures in case of atomic bombing (7). It probably will be advisable for civilian defense to provide synthetic detergents of known safety and efficiency lest injuries result from areas believed to be decontaminated but which actually are not.

In the opening paragraphs of this article we mentioned the radical change in our concept of "dirt" arising from the hazard of using radioactive isotopes. It would be surprising indeed if the advances in cleaning methods which have been learned at the Oak Ridge National Laboratories were not applied in other places where clean surfaces are essential. Milk plants, food handling and processing industries, pharmaceutical plants, and hospitals, where removal of contaminating bacteria is essential, can incorporate in their cleaning operations the benefits of synthetic detergents which have been established by the Oak Ridge research program. In these and similar fields the use of radioisotopes forms the basis for measuring the cleanliness of a surface and the efficiency of cleaning agents incomparably better than any method previously devised. Is it not fortuitous that the materials which create a problem may be used to advantage in the solution of the problem?

References

1. Atomic Energy Commission; Atomic Energy and the Physical Sciences, U.S. Gov't. Printing Office, Jan. 1950
2. Atomic Energy Commission; Control of Radiation Hazards in the Atomic Energy Program, U.S. Gov't. Printing Office, July 1950
3. Tompkins, Bissell and Watson; Working Surfaces for Radiochemical Laboratories; *Ind. and Eng. Chem.* 42, 1469-81 (Aug. 1950)
4. The Solvay Process Division; Nytron in Steel Pickling, 1948
5. The Solvay Process Division; Nytron Inhibition of Caustic Soda Attack on Glass, 1950
6. U.S. Dept. of Commerce, Office of Technical Services; Final Summary Report on Cleaning Vitreous Whiteware, 1950.
7. RKO Radio Pictures; You Can Beat the A-Bomb, Released in 1950

Other References

Aebersold, P. C.; Isotopes as Tools of Engineering, *Mech. Eng.* 71; 987, Dec. 1949

Rittenberg, D.; Some Applications of Radioactive Isotopes in Biochemistry; American Chemical Society, New York Section, Jan. 19, 1951

Henriques, F. C.; Commercial Potential of Nuclear Radiation Sources; ibid.

Emmett, P. H.; Use of Radioisotopes in the Petroleum Industry; ibid.

Rosenblum, C.; Principles in Radioisotope Technology; ibid.

Federal Civil Defense Administration; Health Services and Special Weapons Defense; U.S. Gov't. Printing Office, Dec. 1950

National Bureau of Standards; Handbook 42, Safe Handling of Radioactive Isotopes; U.S. Gov't. Printing Office, Sept. 1949

Bureau of Naval Personnel, Navpers 10870; Fundamentals of Radiological Defense; U.S. Gov't. Printing Office, 1950.

The main ingredient of a new dental preparation consists of microcrystalline hydrated alumina (.025 to .5 microns in size). The balance of the composition contains the usual components such as sodium lauryl sulfoacetate, tragacanth, methyl p-hydroxybenzoate, saccharin, phosphoric acid, flavoring and water. U.S. Pat. 2,550,207 (1951).

From Soaps and Candles to Chemicals—The Story of

Philadelphia Quartz Co.'s 120 Years

PHILADELPHIA Quartz Co. this month is celebrating 120 years of continuous business. It was July 21, 1831 when Joseph Elkinton first opened the doors of his soap and candle enterprise in Philadelphia. He had recently returned from service for the Society of Friends as a teacher in the Tunessassa Indian School of New York. Although he had trained as a silversmith, the production of soaps was more appealing to him. The business grew and by the time the founder's sons, Joseph S. and Thomas, finished their schooling they took an active interest in the business.

Thomas Elkinton's leaning toward technology directed his attention to a chemical, silicate of soda, mentioned in a scientific journal. And, early in 1858, equipment was bought to experiment with the product. The use of silicate of soda in the Elkinton soaps showed a distinct advantage for increasing washing action. Silicate sales to other soap makers were inconspicuous until the Civil War brought an embargo on southern rosin to the north. Soap makers became interested in substituting silicate for rosin. The new soaps found favor with consumers, and thus silicate of soda became an established product. Soaps and candles still were manufactured in the Elkinton factory although with the introduction of the kerosene lamp, candle sales began to wane.

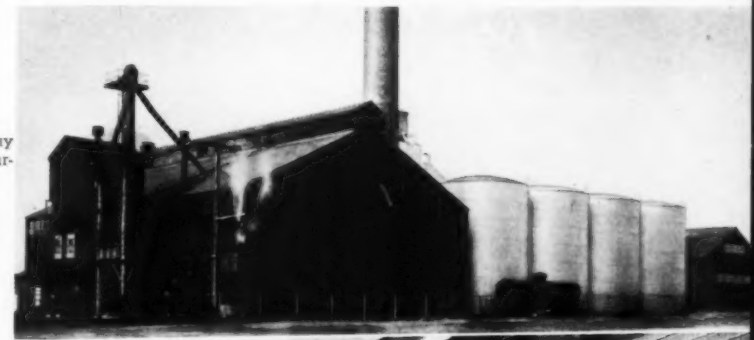
The increased acceptance of silicate as a soap-making ingredient soon required its greater production. In 1864 a large factory was built at 9th & Mifflin Streets, Philadelphia, and the present name of Philadelphia Quartz Co. came into use. Again in 1889, business growth justified expansion to the west, and a silicate factory was opened in Anderson, Ind. At the beginning of the present century, the acceptance of the corrugated paper box as a shipping container, resulted in utilizing another of silicate's properties — adhesiveness, which had been discovered earlier. A new plant was opened in Chester, Pa., and was devoted exclusively to manufacturing silicates of soda. At that time, the Philadelphia factory was closed and soap making discontinued.

Through the company's research over a long period of years, series of chemicals were produced by varying the proportions of the ingredients of silicate of soda. This led to a variety of useful applications. From the original use of the product in soaps, the list of industries now using silicate of soda is long. Mention of a few would include paper, paperboard, oil, rubber, textile, laundry, mining, ceramics, zeolites, catalytic gels. Other uses have been developed such as the coating of granules for asphalt shingles, washing and skinning of fruits and vegetables, the solidification of porous earth, prevention of corrosion in hot and cold water lines, coagulating aids for raw water supplies and waste waters.

Besides the Anderson and Chester units, the company has plants today in Baltimore, Buffalo, N. Y., Jeffersonville, Ind., Kansas City, Kan., Rahway, N. J., St. Louis, and Utica, Ill. A subsidiary, Philadelphia Quartz Company of California operates three plants: at Berkeley and Los Angeles, Calif., and Tacoma, Wash. Another subsidiary is National Silicates, Limited, Toronto, Ontario, Canada.

Thomas W. Elkinton, great grandson of the founder is president of the Eastern and Canadian companies, and a director of the California company. The present directors of Philadelphia Quartz Company are: J. P. Elkinton, J. G. Vail, T. W. Elkinton, W. Martin, J. A. Norton, C. L. Baker, A. W. Elkinton, E. A. Russell, J. C. Russell.

General offices are situated in the Public Ledger Bldg., Independence Square, Philadelphia. Philadelphia Quartz written communications still bear the salutation "Respected Friends". Those who have guided the company's affairs since that July in 1831 have retained the simple phrase, which reflects the dignified courtesy and sincerity with which the founder conducted his business.



Typical present day silicate manufacturing plant.

Newest research laboratories located at Primos, near Philadelphia.

HAND CLEANERS

By Milton A. Lesser

THE third phase in the battle against industrial dermatitis is concerned with the use of protective clothing. Properly designed garments have proved to be of great value in the prevention of these skin conditions. Thus, closely woven cotton fabrics are often used to protect workers from irritant dusts, but the clothes must be cleaned frequently if they are to give efficient protection. Impervious materials, like rubber, offer better protection against dusts than do fabrics, and they also give protection against irritant liquids. (7, 11)

It has been found that synthetic rubbers are more resistant to alkalis and oils than are the natural rubbers. The potentialities of other synthetic materials have been investigated (50) and many plastics and synthetics have been employed in the designing of protective clothing. (51) For example, protective sleeves and aprons can be made of vinyl polymers which are attacked only by the chlorinated hydrocarbons. (52)

However, despite their obvious value, many workers dislike protective clothes. They often refuse to wear them on the grounds that they are uncomfortable, cause excessive perspiration, or for other reasons. In addition, there are certain tasks, including many requiring a high degree of skill and precision, that must be done with the bare hands.

Of interest in this connection are the studies carried out by Hopf. (64) He attempted to measure the penetration of protective ointments into the skin and the degree to which they hinder the entrance of solid particles as indicated by the subsequent application of an ointment containing particles of the dyes, Sudan red and methylene blue. His experiments showed that oil-in-water type emulsions have a better protective action against powders and fat-soluble materials than those of the water-in-oil type. Because they are quite cohesive and have high melting points, beeswax and an artificial wax (Lanette wax) proved to be the best materials for making oil-in-water emulsion bases. His studies also showed that ointments based on the following general formula were best:

	per cent
Water	65-70
Wax	16-20
Glycerine	8-14

Five Main Classes

ALTHOUGH there is often considerable overlapping in both ingredients and indications, protective creams can be divided into five main classes, as follows: (a) the pore-fillers, (b) the powder types, (c) the fatty mixtures, (d) the film-formers, and (e) the miscellaneous group.

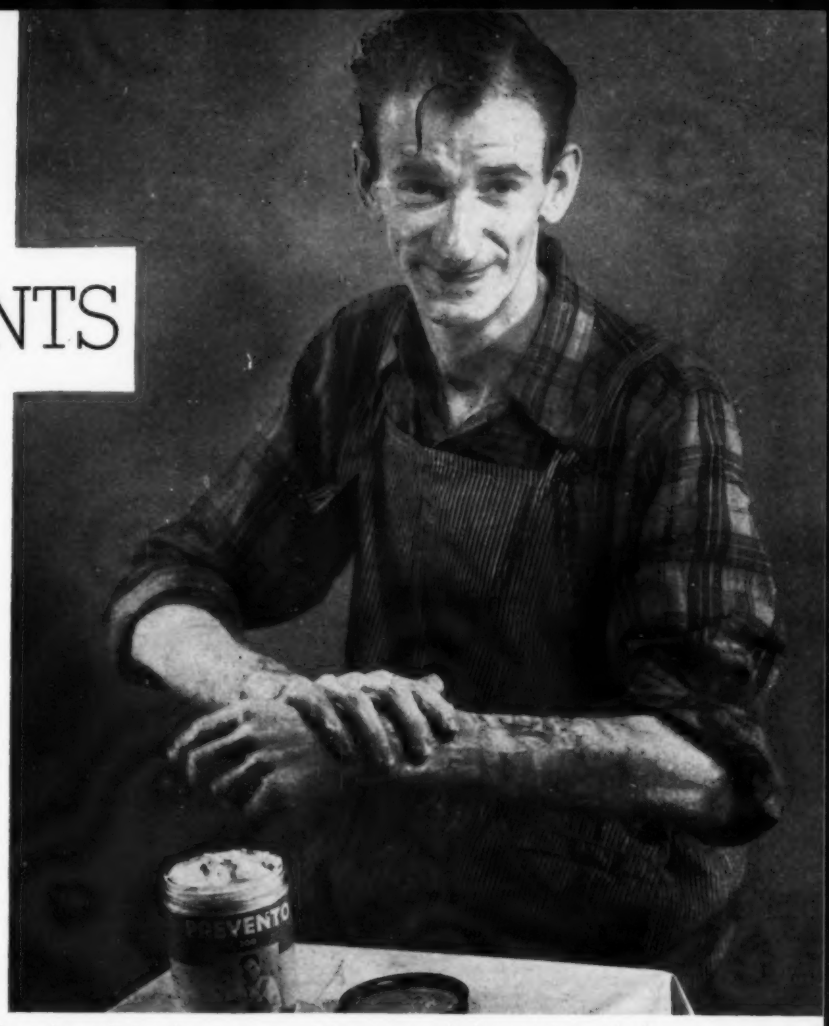
The first class includes the vanishing cream type of product which fills the pores with a soap and facilitates the removal of soil when washing after work. A cream of the vanishing type is said (59) to be excellent for protecting the hands against grime, dyes, ink, or paint because it washes off easily in warm water, taking the accumulated grime along with it. Such a product leaves a dry, greaseless finish on the hands, a property which is highly desirable for workers handling fabrics, paper or other materials that might be injured by greasy agents. However, protective creams containing a high proportion of soap (and vanishing creams are essentially soaps) have the disadvantage of poor water resistance.

Preparations of this type need not be too complex. For example, one of the most frequently cited (29, 60) protectives of the vanishing cream class consists of:

	parts
Stearic acid	20
Sodium carbonate	2
Glycerine	6
Water	78

and PROTECTANTS

PART II



A wider range of protection is provided by products containing a fairly high proportion of inert powders, like talc, calamine, titanium oxide, zinc oxide, iron oxide, and the like, in suitable bases or binders. These comprise the second group of skin protectives which, in addition to the effects of the bases, provide physical barriers against dusts and particulate irritants. An example of such a preparation, selected from a number of formulas tested under actual factory conditions, was provided by Downing and his colleagues, (65) as follows:

Stearic acid	10.0 Gm.
White wax	2.0 Gm.
White petrolatum	4.5 Gm.
Triethanolamine	1.5 cc.
Glycerine	8.0 cc.
Distilled water	54.0 cc.
Talc	20.0 Gm.
Perfume	as desired

Melt the white wax, the stearic acid and the white petrolatum on a water bath and heat to 85°C. Mix the triethanolamine, glycerine and water and heat to the same temperature and then add to the oily mixture. Remove from heat and stir until congealed. Incorporate the talc with the base by grinding and perfume as desired.

When tested for several months in industries where workers are exposed to mechanical irritants and various types of grime, this cream was found to be effective in reducing the incidence of dermatitis due to these causes. It contains no irritants or sensitizers, is easily removed, stable, relatively inexpensive and is readily prepared.

A somewhat different type of base is used in the following product, (66) which protects against mechanical injury from grinding powder, metal filings, sand or glass splinters by means of the inert powders which form a physical barrier:

	parts
Zinc oxide	5
Talc	5
Ferric oxide	1
Irish Moss	2
Benzoin	2
Water	10
Alcohol	15
Vanishing cream	60

Another kind of protective which may be included in this class is provided in the following thick paste that leaves a water-proof, impervious covering on the skin:

	per cent
Zinc oxide	25.0
Kaolin	25.0
White petrolatum	50.0

Although it affords a high degree of protection, it is pointed out (23) that this product is somewhat sticky and, because it rubs off to some extent, it soils some objects. Hence it is suitable for only certain kinds of work.

These objections are also held against most of the members of the third major group of skin protectives. In the main these are fatty or greasy preparations which cover the skin and fill the pores with a harmless material which repels water-soluble irritants and prevents the entrance of harmful petroleum oils, greases, and coal tar derivatives. Because they provide a buffer action, such ointments may also be used against solvents.

According to Schwartz and Campbell (54) ointments of this type may be made of lanolin and castor oil. The addition of a wetting agent or synthetic detergent facilitates the removal of the coating when the hands are washed. The addition of a small amount of perfume serves to mask the odor of the ingredients. The greasiness and slipperiness may be remedied to some extent by dusting the hands with powder after applying the protective. (59)

The Committee on Dermatoses of the A.M.A. (24) also reports that fatty combinations, such as a mixture

of lanolin and castor oil, are best for protecting against the commercial and industrial organic solvents that act as degreasing agents by dissolving the natural protective oil in the skin. According to Leggo, (22) a standard mixture consists of:

	parts
Lanolin	70
Castor oil	30
Wetting agent (e.g. Duponol*)	2

* E. I. duPont de Nemours & Co., Wilmington.

He notes that, for practical purposes, both lanolin and castor oil are insoluble in either cutting oils or soluble oil emulsions.

In England, Horner (60) reports that the simplest waterproof barrier of this class, as devised by the Factory Department of the Ministry of Labour, is made from:

	parts
Soft paraffin (petrolatum)	3
Lanolin	1

He notes that synthetic wetting agents are sometimes added to such waterproof preparations to facilitate removal.

This authority calls attention to the need for special consideration with respect to protection against substances that carry a risk of skin absorption, such as TNT, nitrobenzene and aniline. To these might be added mineral oils, pitch, and tars with carcinogenic properties. He states that animal fats should not be used in barriers against these substances because the local or systemic effects may thus be aggravated rather than prevented.

Of related interest are the findings of Cumming and his associates. (67) In studies on barrier creams for workers making explosives, they found that lanolin is unsuitable for such compounds because such substances as TNT, picric acid and hexamine are highly soluble in it. They also found that, in general, vegetable oils are unsuitable. These English workers developed the following protective, called Camraild Barrier, which was not penetrated by powdered TNT or tetryl during six hours:

	per cent
Paraffin wax (m.p. 135°F.)	20
Soft paraffin	40
Emulsifying wax B.P.	10
Water	30

The comprehensive report of Klauder, Gross and Brown (23) lists several formulas for the fatty type of skin protectives. An interesting and useful preparation from this group has a pH of 5.4 and is therefore recommended where the hands are in prolonged contact with soapy water. It is made from:

	per cent
White wax	10.0
Hydrous lanolin	5.0
Glyceryl monosterate	12.5
Stearic acid	2.0
Petrolatum	75.5

Of course, the more progressive suppliers of raw materials have done considerable research in this field. From such a source (68) comes the formula for an improved cream designed to protect against all types of irritants of an aqueous nature (e.g. emulsified cutting oils) and hydrocarbon solvents. Thus, while the following combination is basically greasy, it is so compounded as to permit ready removal with soap and water:

	per cent
Polyoxyethylene sorbitan monostearite (Tween 61*)	5
Lanolin	25
Castor oil	25
Ceresin wax (64°C.)	5
White petrolatum, to make	100

* Atlas Powder Co., Wilmington, Del.

"Invisible Glove" Protectives

THE fourth class of protectives, sometimes called the "invisible glove" type, comprises products that leave a thin film of material on the skin thus preventing the irritants from touching the dermal surfaces. These are of two kinds; the water-soluble preparations and those impervious to aqueous solutions.

The water-soluble film-forming preparations are intended to protect the skin against oils, the volatile solvents and such water-insoluble allergens as TNT and tetryl. Various cellulose derivatives, Irish moss, sodium silicate, quince seed mucilage, casein, sodium alginate, pectin and vegetable gums, like karaya, acacia and tragacanth, are among the materials used as the film-formers in such products. Suitable plasticizing agents may be used to combat their tendency toward flaking.

One simple preparation of this kind calls for (29) the use of:

	parts
Acacia	5
Tragacanth	5
Borax	2
Water	88

Another useful preparation (69, 70) which protects the hands from oil and grease, but which can be removed readily by washing contains the following:

Soap flakes	7.50 Gm.
Glycerine	25.00 cc.
Sodium silicate	25.00 cc.
Tragacanth	0.20 Gm.
Oil of lemon	0.05 cc.
Water, to make	100.00 Gm.

A clean, nongreasy preparation that does not rub off, one that is recommended (23) for dry work, as a protection against dust-borne irritants or when soiling of the handled materials is to be avoided, may be made from:

	per cent
Glyceryl monostearate	12.0
White wax	12.0
Lanolin, hydrous	6.0
Cholesterol	1.0
Sodium silicate, commercial solution	5.0
Ammonium hydroxide, 10% solution	0.5
Water	63.5

Melt together the wax, monostearate, wool fat and cholesterol. In a separate vessel, add the silicate solution and ammonium hydroxide solution to the previously heated water and stir this aqueous solution into the wax mixture.

Cellulose derivatives are finding increasing use in the formulation of protective preparations. Davies (71) cites the use of methyl cellulose in the formulation of oil-proof barrier products. He gives a formula for a cream which, on drying on the skin, forms excellent films that are tough, resistant to torsion, and are insoluble in acetone and various other organic solvents. The formula utilizes:

Cellulose Derivatives in Protective Creams

	I	*II*	*III*
Stearic acid (triple pressed)	50.0	8.5	4.0
Carbowax Compound 1500†	60.0	...	4.5
Polyethylene glycol 600 monostearate	...	4.3	...
Lanolin, anhydrous	20.0	1.0	1.5
Terpineol	0.3	0.1	0.1
Triethanolamine	4.0	...	...
Potassium hydroxide	2.0	0.5	0.2
Propylene glycol	36.0	5.0	7.4
Hydroxyethyl cellulose (Cellosize WSLM†)	45.0	15.0	7.0
Perfume	0.8	0.4	0.4
Zinc stearate	21.0	...	1.6
Water	200.0	65.2	73.0

† Carbide and Carbon Chemicals Corp., NewYork City.

	per cent
Methyl cellulose	6
Liquid petrolatum	10
Glycerine	10
Water, to make	100
Preservative	sufficient

A protective preparation containing methyl cellulose as the film-forming agent is provided in the industrial literature. (68) Affording protection against cutting oils, industrial dirt and grime, lacquer and other substances, and removable with soap and water, this product is made from:

	per cent
Stearic acid	15.0
Sorbitan monostearate (Span 60*)	2.0
Polyoxyethylene sorbitan monostearite (Tween 60*)	1.5
Zinc stearate	5.0
Sorbitol solution (Sorbo*)	6.0
Methyl cellulose, 4% mucilage	25.0
Water, to make	100.0
Perfume and preservative	sufficient

* Atlas Powder Co., Wilmington, Del.

Patented methods (72) for making skin protectives also specify the use of methyl cellulose. However, other cellulose derivatives are employed in the formulation of protective creams. This is shown above in the three formulas provided in the literature of a leading chemical producer: (73)

These preparations are designed as filming agents to resist the penetration of paint, grease, and dirt into the skin and yet allow ready removal of the film and dirt from the hands by washing with water.

Though often quite efficient, the water-insoluble type of invisible glove protectives require special solvents for their removal. For this reason their use is sometimes discouraged. (60) Used for protection against water-soluble irritants, these film-forming preparations may be based on a number of natural and synthetic resins, certain cellulose compounds (e.g. nitrocellulose and ethyl cellulose), rubber compounds and various other agents. Because solvents are required both in their preparation and removal, it is advisable to use an emollient, like lanolin and cold cream mixture, after removing the film.

A useful basic formula for a water-resistant preparation of this type is given by Hopkins, (74) as follows:

	per cent
Gum benzoin	5.0
Beeswax	1.5
Lanolin	7.5
Mastic	2.0
Alcohol, to make	100.0

Another variation, suggested by Kaluder and his coworkers, (23) consists of:

	per cent
Ethyl cellulose	5.0
Mastic	8.0
Castor oil	1.0
Acetone	86.0

The last or miscellaneous group of industrial skin protectives includes products which provide protection against specific kinds of irritants and sensitizers or physical agents like light and heat. For example, Ross (75) developed the following paste to protect the skin against tar erythema:

Starch	28 Gm.
Kaolin	1600 Gm.
Phenol	36 Gm.
Glycerine	50 cc.
Water	2 liters

If a better cosmetic effect is desired, it is suggested that a coloring agent, such as cochineal, may be added.

During World War II, when dermatitis was all too common among workers in explosives plants, the following was found (76) to provide the best protection against tetryl dermatitis and to be effective against TNT:

	parts
Shellac	13
Isopropyl alcohol	31
Linseed oil	4
Titanium oxide	12
Sodium perborate	13
Talcum	20
Monoethyl ether of diethylene glycol (Carbitol†)	3

† Carbide and Carbon Chemicals Corp., New York City.

Also useful against tetryl and TNT was the following type of application:

	parts
Casein	20
Zinc oxide	20
Iron oxide	2
Water	58

Aside from these mechanical barrier preparations, some of the more specialized protectives contained ingredients capable of chemically neutralizing harmful agents. For example, it has been suggested (24) that a cream containing boric acid may be used as a protection against exposure to alkalis that macerate the epidermis. Thus Reuter (77) has found the following preparation useful in preventing dermatitis among workers handling materials wet with an alkaline solution:

	parts
Lanolin	9.0
Stearic acid	50.0
Triethanolamine	2.7
Carbitol	18.0
Boric acid, saturated solution	120.0

Conversely, a cream offering protection against acids might contain soap and magnesium hydroxide as neutralizing agents. Compounds containing oxidizible irritants might be offset by compositions containing a non-irritating per salt as the oxidizer. (54) Where protection against chlorine bleach is required, a barrier cream

(*Turn to Page* 139)

Hard Surface Cleaners

By Jay C. Harris†

Monsanto Chemical Company

Part II

EVEN though methods for the aqueous cleaning of metals differ considerably from those for removal of soil from painted or other hard surfaces, there is an interesting relationship in the type of cleaning compositions found most effective for either purpose. In metal cleaning, the soil to be removed generally is an oily composition containing solid contaminants. The washing operation may either be an agitated soak, dipping operation, or spraying of streams of solution directly onto the metal. Painted surfaces are frequently washed by scrubbing action but there is a considerable degree of similarity between metal cleaning, the metal soils, and soils deposited in industrial and other locations upon building surfaces. However, the amount of oil or grease present in the latter is considerably lower as a general rule, than in metal cleaning.

The Areskap, Aresket and Aresklene and Santomerse series* represent alkylaryl sulfonates of various types and degrees of sulfonation, either 100 per cent products or built with sodium sulfate. "Sterox SK" is a polyoxyethylene thioether of the nonionic type, as compared with the anionics previously described.

It has long been known that the Areskap, Aresket and Aresklene materials were not effective cotton soil detergents. They are, however, quite effective wetting, dispersing, and emulsifying agents. In contrast "Santomerse No. 3" and "No. 1" (dodecyl benzene sodium sulfonates) are effective cotton detergents while "Sterox SK" is likewise effective in this respect. These data are apparent from Table I.

Structurally speaking the "Kap," "Ket," "Klene" series is not of optimum characteristics to make its members effective detergents. That is, they lack the long alkyl chain necessary to provide orientation, while the aryl group is probably too large for effective results, because a higher alkyl chain would probably tend to make them too insoluble in water. Furthermore, the "Aresklene" product contains an extra sulfonate group which further adversely affects orientation. The other three products, however, are properly designed for cotton detergency work as is apparent from the detergency results obtained on cotton soiled fabrics.

Because of the different soils involved and the tremendous difference in surface areas, it is interesting to compare the results of Table I with those of Table II.

The "Kap," "Ket," "Klene" series, though not effective detergents for cotton washing, is relatively good for cleaning a soiled painted panel provided that the concentration of solutions is sufficiently high. Dilution quickly reduces their efficiency, however.

Table II also shows that "Santomerse No. 3" and "Sterox SK" are quite effective materials, the latter standing up under dilution more effectively than "Santomerse No. 3."

It may be concluded from these few data that with adequate solution strength, cotton detergency information has little bearing upon ability to remove a soil such as that present on painted panels. However, it is interesting that those products which showed good cotton detergency ("Santomerse No. 3" and "Sterox SK") were less affected by dilution and hence could be used in smaller quantities.

Seldom are the synthetic products used alone for cleaning painted surfaces. It has been recognized that alkaline materials used in combination with a foaming or surface tension reducing agent can be quite effective.

A composition comprising 10

TABLE I. COTTON SOIL DETERGENCY

	% Active	Detergency, %* 50 ppm	300 ppm	50 ppm Lather pH	(Ins)	300 ppm Lather pH	(Ins)
Areskap 100	100	25	14	7.3	¼	7.4	¼
Aresket 300	100	33	14	6.5	1	6.4	TR
Aresklene 400	100	16	31	6.9	2	6.8	2
Santomerse No. 3	100	104	111	6.3	4	6.3	4
Santomerse No. 1	40	100	100	6.6	4	6.6	4
Sterox SK	100	116	107	5.9	4	5.9	1

* Santomerse No. 1 (40% active Santomerse No. 3, 60% sodium sulfate) as 100% detergency.

* Trade marked products of Monsanto Chemical Co.

† Presented at 37th Midyear Meeting, C. S. M. A., Chicago, April 30.

TABLE II. SOILED PANEL DETERGENCY AGENTS ALONE

Sample	*% Conc.*	*Ave. % CE*	*Ave. % CCE (TPS 1%)*
Areskap 100	0.5	87.1	101
	0.25	75.2	82.3
	0.125	43.8	47.3
Aresket 300	0.5	85.7	99.4
	0.25	75.9	83.0
	0.125	54.1	58.4
Aresklene 400	0.5	85.7	99.4
	0.25	65.8	72.0
	0.125	54.0	58.3
Santomerse 3	0.5	86.2	100
	0.25	85.0	93.0
	0.125	81.8	87.4
Sterox SK	0.5	87.5	104
	0.25	86.1	106
	0.125	86.9	103

per cent of the surface active agent, 50 per cent of tetrasodium pyrophosphate and 40 per cent soda ash was chosen for these tests: These alkaline materials have been demonstrated on a practical as well as laboratory basis as being quite effective for soil removal from painted surfaces. It is not necessary that relatively large amounts of surface agents be used for this purpose. This point is borne out by examination of paint cleaners now on the market. Naturally the economics of production and sales of these products is important, and excessive amounts of relatively expensive components cannot be tolerated.

It is apparent that the 10 per cent addition of surface active agent has a distinct function, and improves soil removal. It furthermore is apparent that "Santomerse No. 3" is a slightly more effective additive than "Santomerse No. 1." indicating that a minimum amount of active agent must be present to function satisfactorily. From these data it is apparent that a highly effective cotton detergent is thus not necessarily more effective in soil removal from the painted panel.

TABLE III. BUILT PRODUCTS

10% Agent
50% TSPP
40% Soda Ash

Agent	*% Conc.*	*Ave. % CE*	*Ave. % CCE**
Santomerse 1	0.5	87.9	117.0
	0.25	84.6	101.4
	0.125	79.0	99.7
Areskap 100	0.5	85.4	113.7
	0.25	82.0	98.3
	0.125	77.6	98.0
Aresket 300	0.5	86.4	115.0
	0.25	82.2	98.6
	0.125	78.0	98.5
Aresklene 400	0.5	83.6	111.3
	0.25	79.8	95.7
	0.125	82.5	104.1
Santomerse 3	0.5	91.4	121.7
	0.25	86.3	103.4
	0.125	84.3	106.4
None*	0.5	75.1	100
	0.25	83.4	100
	0.125	79.2	100

* Same composition but 10% water in place of agent.

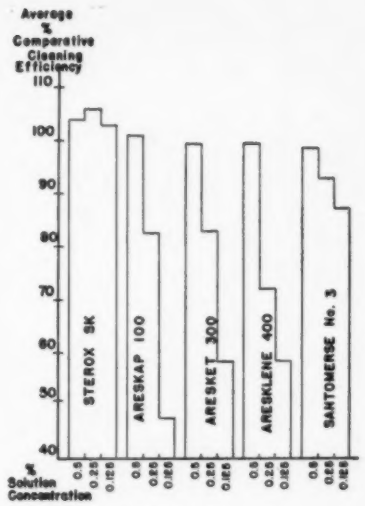


Figure 1
Comparative Cleaning Efficiency—Agents alone.

Table III shows the results obtained when 10 per cent amounts of the several agents were added to the alkaline builder composition. For comparison purposes the alkaline builder was used alone, simply substituting 10 per cent water for the agent ordinarily present, to indicate effectiveness of the builders when used without surface active agents.

Figure 1 depicts the effect of dilution of the agent alone when used for washing painted panels, while Figure 2 indicates the enhancement in soil removal by addition of surface active agents to an alkaline composition. From Figure 2 and Table III it is apparent that concentration of over-all detergent has greater bearing upon soil removal than the structure of the surface active agent used, or its effectiveness in cotton soil detergency.

Metal cleaning is a related field, and data (14) indicate the lesser effectiveness of "Sterox SK" — sodium metasilicate (in five to 95 per cent composition) as compared with an equivalent composition containing "Santomerse No. 1."

A further suggested correlation between metal cleaning and painted surface cleaning indicates that various alkalies perform differently, and that five per cent amounts of surface active agent perform quite satisfactorily (14, 15).

(Turn to Page 137)

WHAT'S

New "Globe Trotter" suitcase (at left) style package for assortment of 10 cakes of toilet soap, by Allen B. Wrisley Co., Chicago. Unit retails for $1.00. Contains two cakes each of Marseilles castile, Swedish lanolin, southern Camelia, Canadian pine and scotch oatmeal.

Recently introduced packaging for "Air-E-Fill" household deodorant by Kemcal, Inc., Oakland, Calif., won first prize in the medicinal division of recent 1951 Carton Competition at Chicago. Andre Paper Box Co., San Francisco, designed and produced the package that won the award sponsored by the Folding Paper Box Association of America.

"Kiddies Bubble Bath", (left) was added recently to the line of Allen B. Wrisley Co., Chicago. Twelve envelopes come in attractive blue box with circus scenes and colorful lettering. Each envelope has circus scene on it. Box looks like children's book. Retails for 59 cents.

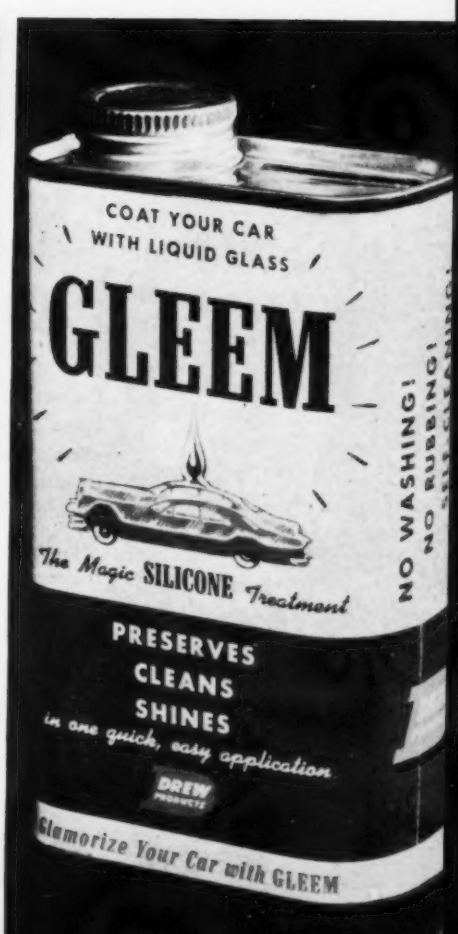
NEW?

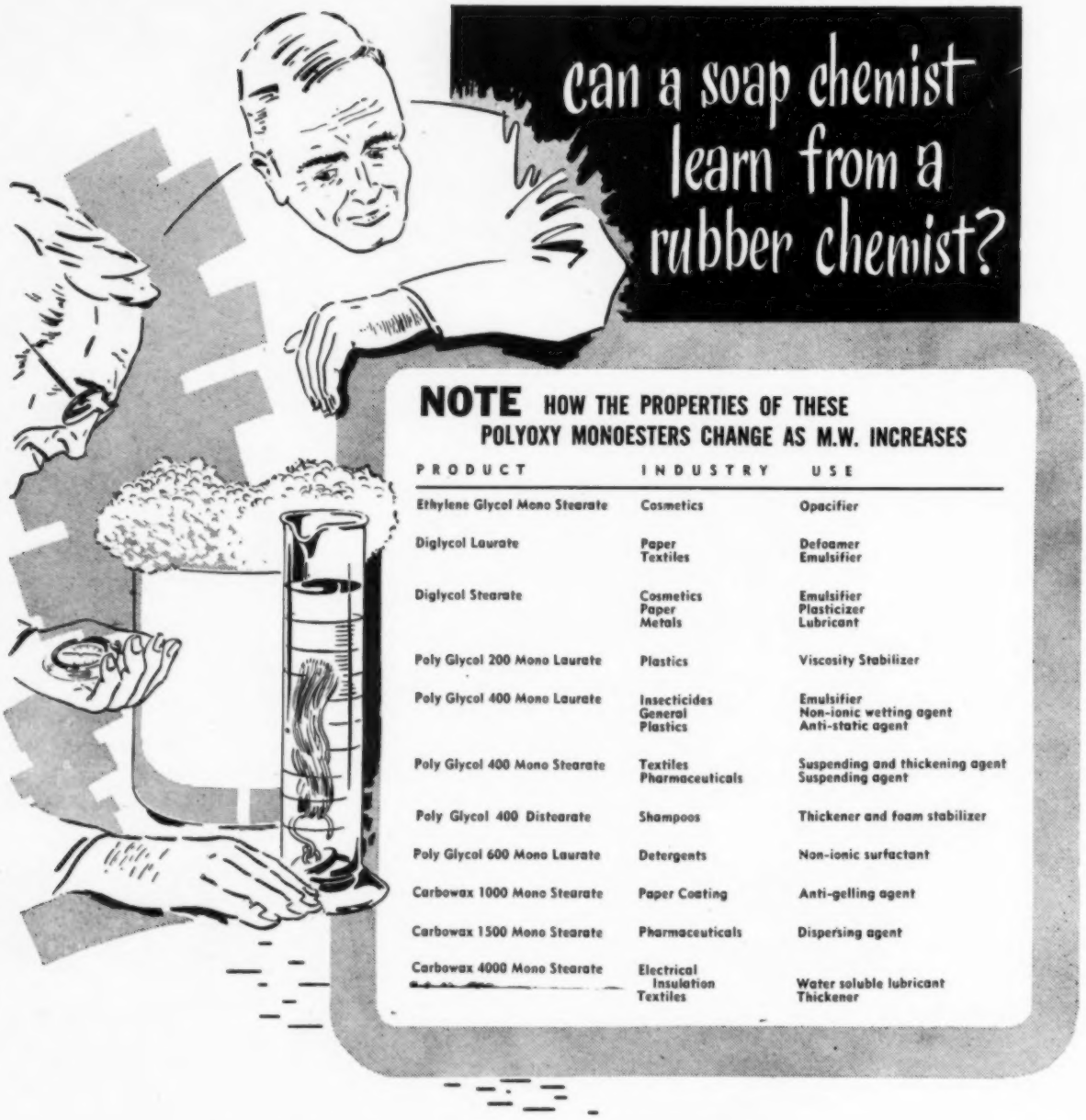
"Dial" shampoo, containing "G-11" is about to be distributed nationally, after having been test marketed in several areas throughout the U. S. Three and one-half fluid ounces come packaged in modern plastic container. Made by Armour & Company.

Extreme right: New "Preenet" cleaner for asphalt tile and rubber tile floors announced recently by A. S. Harrison Co., South Norwalk, Conn. New product, which is said to clean and wax in one operation, retails for $1.09 in the quart size; is $3.25 per gallon.

"Handeez" industrial hand soap made by C. B. Dolge Co., Westport, Conn., is now available in five pound packages. Coming six to a case, a handy "Pourite" plastic and metal pouring spout is included. The cleaner is also available in bulk in 200 and 60 pound drums and 14-pound containers.

Latest entry in the field of silicone car cleaners is E. F. Drew & Co.'s "Gleem." It is being distributed nationally through automotive, hardware, drug and department store outlets. Eight ounces are 89 cents.





can a soap chemist learn from a rubber chemist?

NOTE HOW THE PROPERTIES OF THESE POLYOXY MONOESTERS CHANGE AS M.W. INCREASES

PRODUCT	INDUSTRY	USE
Ethylene Glycol Mono Stearate	Cosmetics	Opacifier
Diglycol Laurate	Paper Textiles	Defoamer Emulsifier
Diglycol Stearate	Cosmetics Paper Metals	Emulsifier Plasticizer Lubricant
Poly Glycol 200 Mono Laurate	Plastics	Viscosity Stabilizer
Poly Glycol 400 Mono Laurate	Insecticides General Plastics	Emulsifier Non-ionic wetting agent Anti-static agent
Poly Glycol 400 Mono Stearate	Textiles Pharmaceuticals	Suspending and thickening agent Suspending agent
Poly Glycol 400 Distearate	Shampoos	Thickener and foam stabilizer
Poly Glycol 600 Mono Laurate	Detergents	Non-ionic surfactant
Carbowax 1000 Mono Stearate	Paper Coating	Anti-gelling agent
Carbowax 1500 Mono Stearate	Pharmaceuticals	Dispersing agent
Carbowax 4000 Mono Stearate	Electrical Insulation Textiles	Water soluble lubricant Thickener

Yes, a soap chemist can learn a thing or two from a rubber chemist about polyhydric alcohol fatty acid esters. The rubber chemist knows well how Polyethylene Glycol 400 Di Laurate and Mono Laurate affect synthetic rubber and resin latices. The soap chemist can learn how the monoester is an excellent penetrating and cleansing non-ionic wetting agent capable of improving quality and adding good properties to his products.

Note how the products in the above table change in uses as the molecular weights increase. No matter what your field of work is, Glyco can tell you a thing or two about polyoxy monoesters. Why not send to Dept. S751 for a copy of our latest Ester catalog today?

CHEMICALS BY GLYCO

GLYCO PRODUCTS CO., Inc.
26 Court Street, Brooklyn 2, N. Y.

Formulation of Emulsions

A simple system is described for determining processes of addition and type of stirring recommended in the formulation of an emulsion

By George L. Brown and Robert J. Myers

Research Laboratories
Rohm and Haas Co.

THE process of emulsification has been developed as an art or at best as an empirical science, as might have been predicted from a knowledge of the diversity of the field. The problems encountered are very diversified as a result of the extremely wide range of compositions and properties embraced by industrial and household emulsions. Substances varying in consistency from the thinnest oils to the most viscous resins may often be handled and applied advantageously in the emulsion state. Emulsifiers used may be the common anionic types such as fatty acid or rosin soaps. They may be non-ionic if stability is necessary in the presence of hard water or if special compatibilities are required. They may be cationic for specialized uses such as those where substantivity to cellulose is indicated. Concentrations of the oil and water phases may cover the entire range from dilute oil-in-water to dilute water-in-oil emulsions.

The worker who engages in his first attempts at preparation of an emulsion usually has no sensible guide, and must find his way by the use of highly dispersed literature on the subject, followed by trial-and-error experimentation. Despite this appearance of disorder, a knowledge of the nature of the materials to be used, the type of emulsion desired, and the equipment available can be invaluable in simplifying the development of a new emulsion system. In this article we describe a simple system for determining the processes of addition and type of stirring recommended in formulating an emulsion. The choice is based upon the viscosity of the two phases and solubility of the emulsifier.

The choice of the emulsifier has been extremely arbitrary in the past, and no systematic method can be prescribed. Although a completely scientific approach may never be developed, progress is being made in eliminating the almost completely arbitrary approach necessary in the past. The best guide available, however, is still a knowledge of past experience with systems similar to the one to be studied.

The Nature of Emulsions

ORGANIC liquids and water form stable mixtures if either solution or solubilization is possible. Two or more liquids are soluble if a single phase results from mixing. Solubilization is a special case of solubility which may be defined as the spontaneous passage of an insoluble substance into a dilute solution of a detergent. Although these systems are thermodynamically stable, the concentration ranges accessible are very limited.

Emulsions are often employed where higher concentrations of oil in water or water in oil are desired than can be obtained by solubility or solubilization. The term "oil" is used in emulsion technology as a generic term for liquids which are sparingly soluble in water.

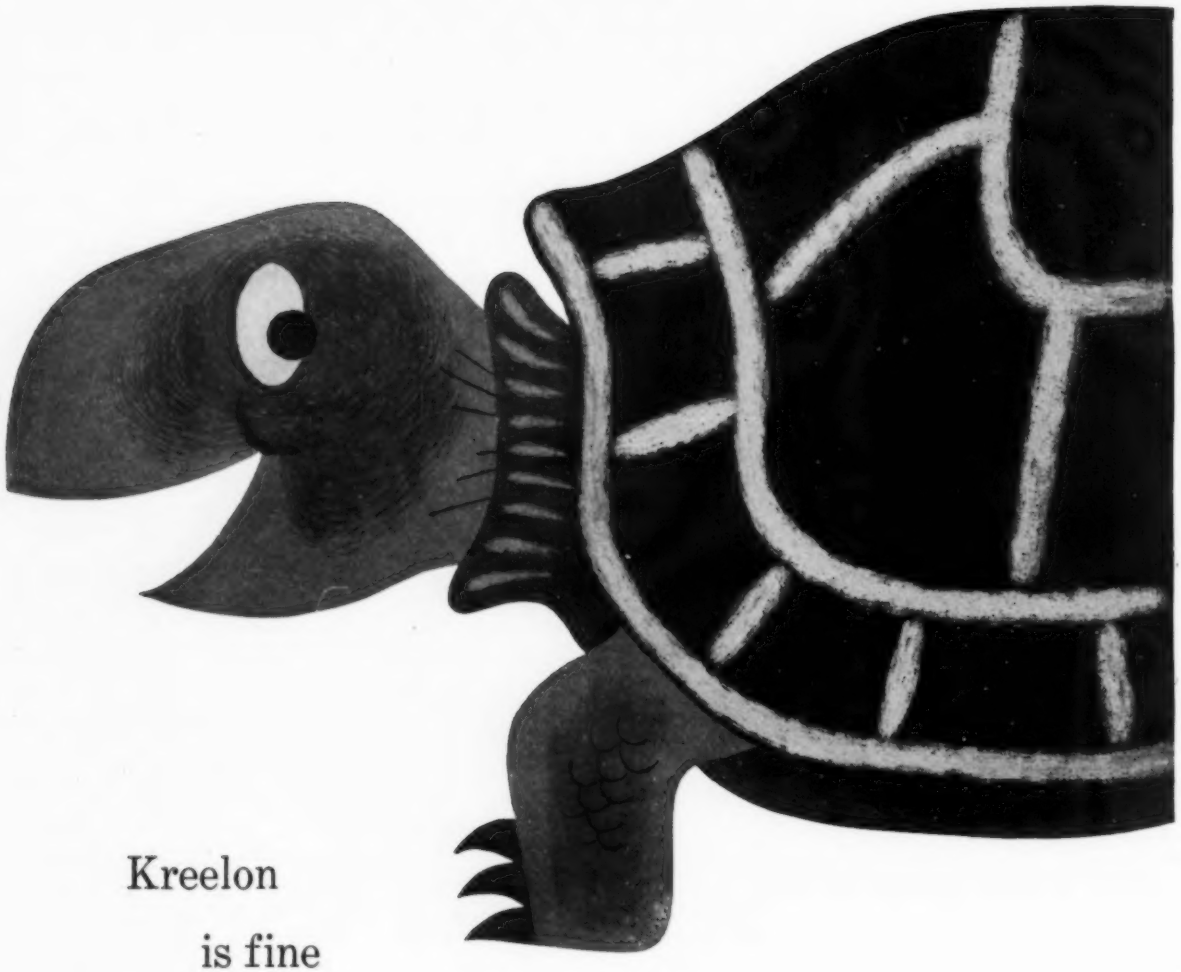
Emulsions are thermodynamically unstable suspensions of one liquid in another. The term is also commonly applied to two types of solid in liquid suspensions, which should be called dispersions. When the solid is processed (emulsified) in the liquid state, as in wax emulsions, or when a solid is formed by emulsion polymerization of a liquid, the resulting products are termed emulsions.

Emulsions ultimately break spontaneously as a result of the decrease in surface energy which accompanies coalescence. The particles may cream or settle as a consequence of the action of gravity on particles which are less or more dense than the continuous medium. The formulator must work to counteract nature in an attempt to defer these processes.

To do this, suitable emulsifying agents are utilized. The emulsifying agents orient at the oil-water interface, and perform two functions: (1) they decrease interfacial tension, permitting formation of emulsion droplets small enough to remain suspended, and (2) they act as protective agents to prevent coalescence of the emulsion droplets. Both functions may be performed by the same material, but the use of two or more materials gives wider latitude in formulation.

Two types of emulsions are possible, oil in water (O/W) and water in oil (W/O). Both are of exceedingly great commercial importance, but for purposes of discussion, it will simplify matters to speak mainly of the O/W type. Many of these considerations may be extended to W/O emulsions with equal validity.

Many techniques are available for making emulsions, some of them rather elaborate. Since only the most elementary stirring equipment is



Kreelon is fine for all hard surfaces

"High-light" Kreelon* is more soluble than most detergents of its type — makes a clear solution. It wets down quickly . . . emulsifies grease . . . picks up dirt . . . rinses off freely . . . leaves no film. It works in cold water as well as hot. It washes everything from fine crystal to concrete.

That's why Kreelon is an ideal detergent for so many formulations. Whether you make a cleaner for automobiles or golf balls, windows or dishes, you can use Kreelon. You'll also find it fine for building maintenance cleaners.

Want facts on what Kreelon can do for your product? Write us.

*Reg. U. S. Pat. Off.

• *Specifications and applications of Wyandotte Organic Chemicals are in the current Chemical Materials Catalog.*

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE
HYDROGEN • DRY ICE • SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE • PROPYLENE
DICHLORIDE • AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

WYANDOTTE CHEMICALS CORPORATION
Wyandotte, Michigan • *Offices in Principal Cities*

Wyandotte
REG. U. S. PAT. OFF.

available in some establishments, rather simple techniques may be necessary. A simulation of these techniques in laboratory research aimed at development of such a product is then indicated. It must not be assumed that a particular emulsifier is incapable of producing an acceptable emulsion on the basis of a restricted examination of methods, but this point is of academic rather than practical import.

The mechanism of emulsification and the nature of emulsion stability have been studied frequently in the past, with rather incomplete and qualitative elucidation of the fundamentals. The process of emulsification is that of physically extending one phase in the other by shaking, stirring, or mixing, the extended film or column then collapsing into small spheres as a result of its instability. If this is done in the presence of an emulsifying agent, coalescence of these spheres is greatly delayed. With no agent present, the two phases separate quickly into distinct layers.

A decrease in interfacial tension between the oil and water is favorable to formation of a good emulsion, since it decreases the energy which must be created in the greatly extended interface. There is, however, no direct correlation between the stability conferred by a particular surface active agent and its effect upon the interfacial tension.

Wherever possible, it is advantageous to form an emulsion by inversion, that is, by going from an initial W/O to a final O/W emulsion, (or in the opposite direction if a final W/O emulsion is desired). Better emulsions are usually produced by this technique, probably because of a greater extension of the oil phase as the water droplets increase in volume and become deformed spheres separated by a thin film of oil.

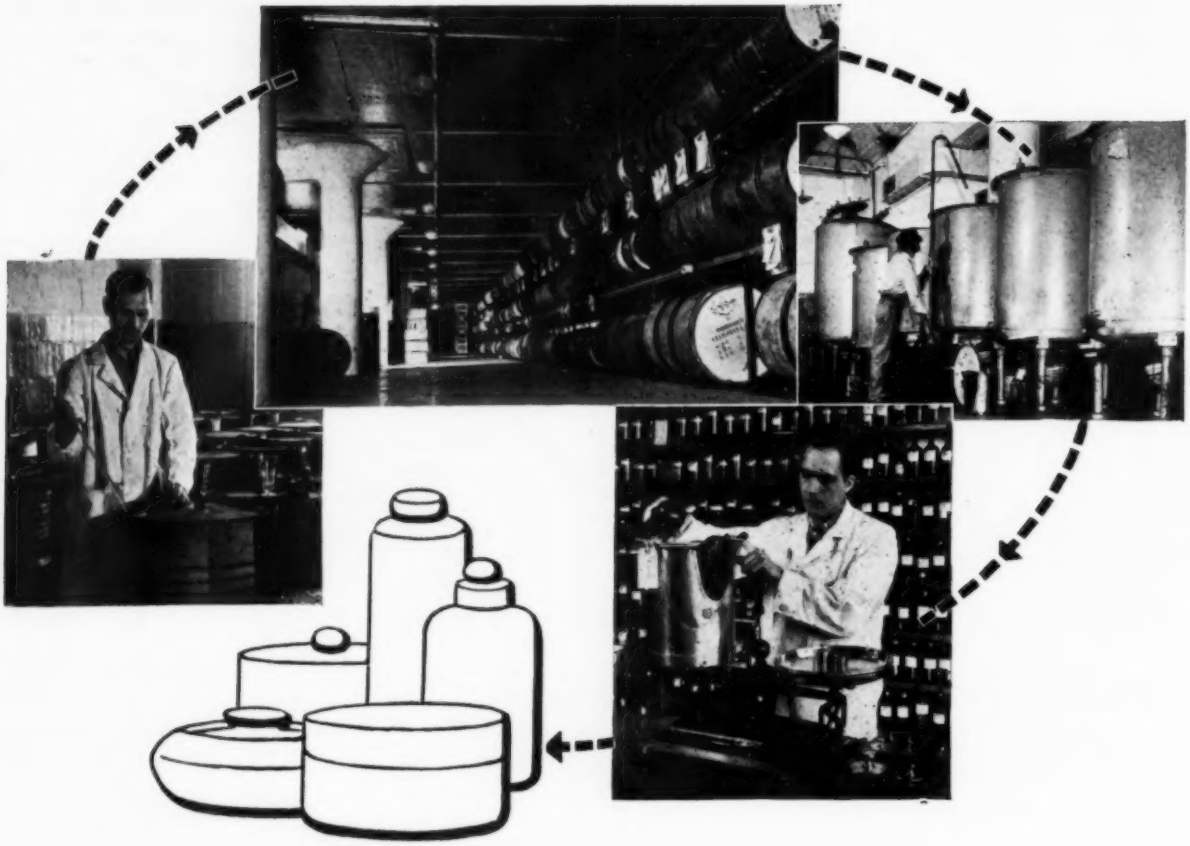
The inversion technique may be used if the emulsifier is oil soluble or oil dispersible. If it is found that an oil to be emulsified dissolves the surface active agent being tried, the experimental attempts at formulation are greatly simplified. The oil and emulsifier, usually present as about 10% of the oil in initial experiments, are mixed and water is added slowly with thorough stirring. A viscous mixture will usually form, with a consistency similar to petroleum jelly. When the inversion point is reached, a small addition of water will convert the mixture into an O/W emulsion, which may be further diluted as desired. Where initial attempts are successful, the procedure may be repeated with lower emulsifier content until a desirable formulation is found.

Details of the technique depend upon the viscosity of the phases and the type of emulsion sought, as well as the solubility of the emulsifier. A generalized approach is presented in Table I. It will be seen that the suggested techniques are those which afford maximum possibility for dispersing one phase in the other, combined with complete mixing.

If a colloid mill is available, the technique may be much simpler. A crude mixture is made by stirring or shaking, and the mixture passed several times through the mill. If the oil being examined is capable of being emulsified with a specific agent, the colloid mill will usually, but not always, produce a fairly good emulsion.

TABLE I

Solubility of soap	*Viscosity of Soap Sol'n.*	*Viscosity of Other Phase*	*Emulsification Procedure — Equipment*
Oil Soluble	Viscous	Non-Viscous	Slow speed on oil phase—Add water phase slowly to invert. (Or leave as W/O if desired.)
		Viscous	Slow speed agitation. Add either phase to the other, slowly, to inversion point, complete where desired.
	Non-Viscous	Non-Viscous	1. High speed agitation of crude mixtures, for either type. 2. High speed of oil phase with some water to produce viscous W/O type. Complete thru inversion with H_2O (using slow speed). Finish at high speed, either type.
		Viscous	Slow speed agitation of aqueous phase, add oil phase slowly to build up visc. and invert. Revert with aqueous phase (for O/W) or complete as W/O.
H_2O Soluble (also alkali or acid soluble)	Viscous	Non-Viscous	Slow speed agitation on aqueous phase—add oil slowly to invert for W/O or maintain as O/W throughout.
	Non-Viscous	Viscous	Slow speed agitation. Add less viscous phase to the more viscous phase, to inversion point, or complete all on one side.
		Non-Viscous	1. High speed agitation of crude mixture for either type. 2. High speed agitation of aqueous phase, concentrated in emulsifier, add oil slowly to produce viscous phase. Slow speed thru inversion point. Finish at high speed.
		Viscous	Slow speed agitation of oil phase, and water phase slowly to build up viscosity and invert. Revert with oil if W/O type desired.



PLANNED JOURNEY . . . *Let us follow the carefully planned journey of these hundreds of basic oils and aromatics that line the long, three-tiered drum rack in our New York plant, from their prime sources of production throughout the world to the myriad of finished products in which they will ultimately be used . . . As each incoming shipment arrives it is sampled, drum by drum, in preparation for the long series of rigid laboratory control tests that will determine acceptability for stock.* **FRITZSCHE** *standards are high and delivered raw materials* **must** *conform. Once approved, the shipment is admitted to stock and stored where correctly conditioned atmosphere provides the cool, even temperatures necessary for proper storage of delicately constituted oils. In time, these oils are transferred—as needed—to the Bulk Storage Room where they are first clarified by centrifuge, then bulked in tightly-covered, glass-lined tanks to insure maximum uniformity. They are now ready for the customer, to be packed and shipped, or for the compounder who will make them up in exact accord with the customer's adopted formula . . . The planned journey of these* **FRITZSCHE** *products, from point of origin to finished goods, is one designed to produce the utmost in product quality and customer satisfaction. It's one reason so many successful buyers always turn to* **FRITZSCHE.**

FRITZSCHE *Established* 1871

Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* °STOCKS: *Atlanta, Georgia, Boston, Massachusetts, °Chicago, Illinois, Cincinnati, Ohio, Cleveland, Ohio, °Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, °St. Louis, Missouri, °Toronto, Canada and °Mexico, D. F.* FACTORY: *Clifton, N. J.*

Since the mechanics of making and breaking emulsions are very similar, a good emulsion may be broken when passed through the colloid mill. Thus simple stirring equipment is sometimes preferable to an elaborate colloid mill.

Selection of Emulsifiers

THE best aid in selection of an emulsifier system seems to be past experience. The extensive literature on the subject should furnish examples of materials comparable with most experimental systems being tested (1).

Some progress has been made in narrowing the choice of an emulsifier. The most concrete development thus far has been the assignment of H.L.B. (hydrophile-lipophile balance) numbers to both oil and emulsifier (2). An emulsifier is chosen such that its H.L.B. value coincides with that of the oil to be used, and this serves as a first approximation in the formulation. Two or more emulsifiers may be combined, the H.L.B. value being obtained by summing the contributions of the individual materials. Unfortunately, the H.L.B. number of both oil and emulsifier must be determined experimentally from a rather formidable number of experiments. Thus the system is only a method of classifying past experience. The idea seems to be of genuine value, but development and refinement are needed for greater utility.

Ideally, a method is sought for choosing an emulsifier for a certain oil from some measurement independent of emulsification. A qualitative description of some of the relationships involved is possible. Since orientation of the emulsifier at the interface is necessary for any stabilization to be effected, a balance of hydrophilic and hydrophobic properties must be obtained to assure this orientation.

For surface active agents with a strongly polar group, such as those containing a highly ionized head, Langmuir (3) has shown from energy considerations that the most probable orientation is that of the organic tail in the oil phase and ionic head in the water phase. For a given soap, such as sodium stearate, this is probably true even when the nature of the oil is varied greatly.

The orientation of non-ionic surface active agents, such as glycerol-monostearate and the ethylene-oxide addition products of alcohols or phenols, has not been elucidated. These materials are more specific in their emulsifying ability than the soaps, but are often more effective when the optimum combination of oil and emulsifiers is found.

Beginning with a specified lipophilic tail, such as octyl phenol, a more hydrophilic emulsifier is produced as more ethylene oxide is polymerized with the octyl phenol. The more hydrophilic the oil to be emulsified, the more hydrophilic the emulsifier required. Thus paraffin oils, which are extremely hydrophobic, are emulsified with very hydrophobic emulsifiers such as glycerol-mono-oleate, or with the reaction product of octyl phenol with about five moles of ethylene oxide. In going to a more hydrophilic oil, such as benzene, a more hydrophilic agent is required, which would be obtained in the octyl phenol series by incorporating more ethylene oxide — about ten moles now being necessary. Generally benzene would not be considered to be "water loving", but it will be recalled that its solubility for water is considerably greater than that of mineral oil, although the value is very small.

Some work is in progress at the present time in the Rohm & Haas laboratories on a system for determining the hydrophilic and lipophilic nature of oils and emulsifiers, independent of emulsification trials, and progress has been made in characterizing the materials quantitatively.

Emulsion Stability

THE object of emulsification is usually to produce a system in which separation is minimized during the desired period—a few hours to a few years, depending upon the contemplated use. Small particle size aids the stability, and may be necessary in the application. Floor waxes, for example, may lose gloss with an increasing particle size. For control or research interest, a determination of particle size over a period of time may be desirable. A large number of methods have been described (4), but for most purposes a simple determination of light scatter of a suitably diluted sample is sufficient.

Actual stability, not particle size, is the practical criterion of acceptance in most cases. Lack of phase separation and retention of the desired application properties are the control tests necessary.

The properties of the emulsion system influence emulsion stability in a manner which may often be predicted. The rate of settling of the particles may be predicted from Stokes' law, modified by Robinson (5) to include the influence of a gravitational field:

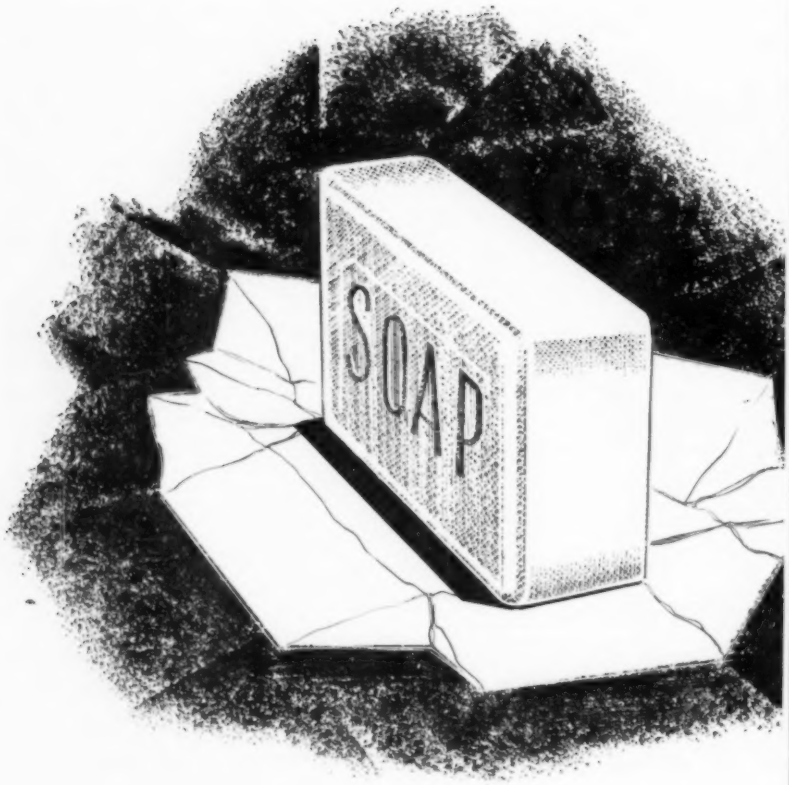
$$\frac{dH}{d\Phi} = \frac{ka^2(D-d)}{Z}$$

where H = height of sediment
Φ = time of settling
k = proportionality constant
a = average particle diameter
D = specific gravity of particle
d = specific gravity of suspension
Z = viscosity of suspension

Particle Size

FROM the equation, it is seen that a small particle size is desirable. The original particle size is determined by the composition of the system and the mechanics of formation. Frequently no testing more elaborate than a visual comparison of emulsions is needed to ascertain the trend of particle size produced by alteration of the formula—the more transluscent the emulsion, the smaller the particles. This may be determined quantitatively by measuring light transmission of a suitably diluted sample.

More vigorous Brownian movement of small particles decreases their tendency to settle. In decreasing the particle size, the oil-water interface is increased rapidly, a ten-fold decrease in particle diameter giving a ten-fold increase in surface area. If a surface active agent were to form a mono-



Soap wrapper that can't mold

The casein-coated soap wrapper that is protected by Monsanto Santobrite *can't mold* in any climate. This protection, built-in by the paper maker, is inexpensive.

The addition of Santobrite (sodium pentachlorophenate, technical) during paper manufacturing gives *complete protection* against surface microbiological growth. As little as 2.0% of Santobrite, based on the dry weight of casein, gives the desired result. Santobrite may also be added to adhesives. Mold organisms flourish in them, too.

If you have the problem of moldy wrappers slowing down your soap sales, write for complete details on the use of Santobrite. See how easy it is to eliminate the difficulty. Address the nearest Monsanto Sales Office or MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

MONSANTO CHEMICALS
to control weeds, insects and other pests

INSECTICIDES

Nifos* T (Tetraethyl-Pyrophosphate, Technical)
ortho-Dichlorobenzene (Commercial Grade)
Niran* (Parathion)
Santobane* (DDT)
Santochlor* (Paradichlorobenzene)

FUNGICIDES

Copper 8* Quinolinolate
Santobrite* (Sodium Pentachlorophenate, Technical)
Santophen* 1 (ortho-Benzyl-parachlorophenol, Technical)
Santophen 20 (Pentachlorophenol, Technical)
Biolite*

HERBICIDES

2,4-Dichlorophenoxyacetic Acid
2,4-Dichlorophenoxyacetic Acid (Isopropyl Ester)
2,4,5-Trichlorophenoxyacetic Acid
2,4,5-Trichlorophenoxyacetic Acid (Isopropyl Ester)
Santobrite (Sodium Pentachlorophenate, Technical)
Santophen 20 (Pentachlorophenol, Technical)
Sodium Trichloroacetate

ODORANTS

Methyl Salicylate, U.S.P. (Synthetic)
Santomask*

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

*Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS AND PLASTICS

SERVING INDUSTRY... WHICH SERVES MANKIND

molecular layer on the particle (as it may for large particles), a greater concentration would be required to stabilize small particles. Since the natural stability of small particles is greater, however, less emulsifier may actually be required to obtain stable, small particle emulsions.

If we know the surface area occupied by a molecule of the surface active agent, the concentration necessary to give a monomolecular film for any particle size emulsion is calculable.

$$\text{Area of sphere} = \#D^2$$
$$\text{Volume of sphere} = \#D^3/6$$

The area per unit volume for a particle of diameter D is

$$\frac{A}{V} = \frac{6}{D}$$

Thus the total area for 1 ml. of oil dispersed as uniform spheres is:

Diameter		*Surface Area, total*	
Microns	*Centimeters*	*Cm²*	*A.U.²*
10	10^{3}	6×10^{8}	6×10^{20}
1	10^{4}	6×10^{8}	6×10^{20}
0.1	10^{5}	6×10^{9}	6×10^{21}
0.01	10^{6}	6×10^{8}	6×10^{22}

For sodium stearate, for example, with a surface area of about 20 square angstrom units the number of grams of emulsifier required for a monomolecular surface film is given by:

$$\text{Weight} = \frac{\text{Total Area} \times 306}{20 \times 6 \times 10^{22}}$$

Where 306 is the molecular weight, 6×10^{23} Avagadro's number, and the total area is expressed in square angstrom units.

For various sizes of emulsion particle, the percentage sodium stearate required (% soap on oil) to give a monomolecular film is as follows:

Particle Diameter, microns	*% Sodium Stearate on oil*
10	0.15
1	1.5
0.1	15
0.01	150

For the range of 0.1 to 1 micron particle size, about 1.5 to 15% emulsifier is required experimentally, lending support to this postulate of an approximate monomolecular coverage.

On this basis, a molecule with a large ratio of surface area to molecular weight which yields a strong film should be efficient as an emulsifier.

Viscosity

A HIGH viscosity medium is advantageous in prolonging stability of an emulsion. Thickeners may be added to the continuous phase to achieve this condition. For O/W emulsions proteins, gums, or synthetic polymers such as "Acrysol GS" (sodium polyacrylate), sodium carboxymethyl cellulose, or "Methocel" may be added to raise the viscosity. Where oil is the continuous phase, the viscosity of the emulsion may often be sufficiently high without modification.

Density

SINCE the force exerted by gravity (which results in settling) is proportional to the difference in the density of the two liquids, equalization of the densities decreases creaming of the emulsion. However, the added substances must be chosen carefully, since ionic emulsions in particular are sensitive to the presence of alcohols, salts, etc. An additive must be chosen which does not destroy the protective charge or hydrophile layer on the particle.

Mixed Emulsifiers

THE use of mixed emulsifiers often achieves improved emulsification. Thus mixtures of two good emulsifiers may be superior to either alone at the same total concentration. Mixed nonionic and ionic emulsifiers should be considered in particular, for the combination acts through the combined stabilizing influence of surface charge and the presence of a protective agent.

The mechanism in part is that of a synergistic effect upon interfacial activity. The mixed emulsifiers may lower interfacial tension below that of either one alone (6).

pH

THE absorption of ions on the emulsion particle plays an important, but not wholly determined role in stability. Addition of ammonia to an anionic emulsion or acetic acid to a cationic emulsion may contribute very greatly to stability.

Additional stabilization of emulsions may be accomplished by incorporation of water soluble polymers. These stabilizers may or may not produce emulsification in their own right. Their action is protective in nature, through the formation of a tough, adsorbed layer on the emulsion particles. These materials include gelatin, casein, gum arabic, gum tragacanth, sodium and ammonium alginates, methyl cellulose, sodium carboxymethyl cellulose, and sodium polyacrylate. These materials are employed in concentrations of 0.1 to 5 percent on the entire emulsion. Special attention must be paid to the pH range in which the materials are used, and to compatibilities of all components. Consultation of the literature is advisable to determine the conditions suitable for each of the materials.

Bibliography

1. de Navarre, M. G., "The Chemistry and Manufacture of Cosmetics", New York (1941)
   Bennett, H., "Practical Emulsions", Brooklyn, N. Y. (1947)
2. Griffin, W. C., *J. Soc. Cosmetic Chemists* 1 (5), 311-326 (December, 1949)
3. Langmuir, I., Alexander's "Colloid Chemistry, Vol. I", p. 525, New York (1926)
4. Cohan, L. H., and Hackerman, N., *I. & E. Chem.*, Anal. Ed., 12, 210-213 (1940)
5. Robinson, C. S., *Ind. Eng. Chem.*, 18, 869 (1926)
6. Jellinek, H. H. G., and Anson, H. A., *J. Soc. Chem. Ind.*, 68, 108 (1949)

Son of J. W. Moore Killed

Albert Moore, 20-year-old son of James W. Moore, vice-president and secretary of Archer - Daniels - Midland Co., Minneapolis, was fatally injured when he was thrown from a speedboat on White Bear Lake, Minn., June 14. He was struck by the propeller of the boat and died on the way to the hospital. He recently completed his sophomore year at Purdue University.

Lever Advances Baylis

Edward Baylis of Notre Dame de Grace, Montreal, Canada, former manager of Lever Brothers in Quebec Province, recently went to Toronto to take over the post of sales promotion manager of the Canadian company. He was advertising manager of Dominion Stores, Ltd., before joining Lever Brothers, in which he held a number of executive positions.

● If the high price of
Oil Cedarleaf is one
of your current problems
solve it now
by substituting

IMITATION CEDAR COMPOUND "ORBIS"

in your formulation

IT WILL DO THE TRICK AT HALF THE PRICE OF THE NATURAL OIL

A sample is yours for the asking

COSMETIC RAW MATERIAL
WATER SOLUBLE GUMS
FOOD COLORS

PERFUME BASES
ESSENTIAL OILS
FRUIT FLAVORS

QUINCE SEED
OLEO RESINS
STEARIC ACID

ORBIS
PRODUCTS CORPORATION
215 PEARL STREET, NEW YORK
FACTORY AND LABORATORY: NEWARK, N. J.

WAXES
THYMOL
AROMATICS

CHICAGO PHILADELPHIA MEXICO, D.F. BOSTON LOS ANGELES MEMPHIS, TENN.

Triple Victory

IN MACAULAY'S FAMOUS POEM, Horatius stood before the narrow bridge to Rome and saved the city by slaying Lars Porsena's three ablest warriors.

Now, no one's going to write poetry about IONOL® . . . the antioxidant that is proving so successful in essential oils manufacture . . . but there *is* a parallel!

IONOL is a determined fighter against color or odor changes due to oxidation. This tri-substituted hindered phenol maintains the stability of animal, vegetable and mineral oils . . . safeguards the purity of essential oil and fatty acid products.

And a little IONOL goes a long way . . . less than one per cent increases oxidation induction periods *by as much as 275 hours.*

While the demand for IONOL currently exceeds production capacity, it will pay you to give serious consideration to its advantages in your product development planning.

IONOL IS ALREADY IMPROVING THESE:

Pressure sensitive tape • Asphalt and rubber tiles • Drug sundries
Rubber coatings for wire • Light-colored extruded specialties
Swimming accessories • Play shoes

SHELL CHEMICAL CORPORATION

CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

Eastern Division: 500 Fifth Avenue, New York 18, N. Y.
Western Division: 100 Bush Street, San Francisco 6, Calif.

The latest books

MODERN CHEMICAL SPECIALTIES

by Milton A. Lesser

This text covers the formulation, manufacture, and use of polishes, cleansers, detergents, floor-care products, leather-care products, textile products, industrial and household specialties, and many other allied chemical specialties. This new 514-page book comprises 42 chapters, each dealing with a different specialty, and including formulas and manufacturing method for that specialty. The manufacturer, marketer, chemist, and buyer will find this practical book invaluable. Order your copy now.

514 pages — $7.25 in U.S.A.
42 chapters — $7.75 elsewhere

SOAPS and DETERGENTS

by E. G. Thomssen and John W. McCutcheon

550 pages

CONTENTS

RAW MATERIALS
MACHINERY AND EQUIPMENT
SOAP MAKING METHODS
SOAP PRODUCTS
PERFUMING AND COLORING
GLYCERINE RECOVERY
SYNTHETIC DETERGENTS
ANALYTICAL METHODS

$9.00 in U. S. A. — $9.50 elsewhere

SYNTHETIC DETERGENTS

by John W. McCutcheon

435 pages

At last a practical text concerned primarily with the detergent compounds, defining the various types of synthetics as to class, manufacture, application, and processing is now available.

This text will be of interest to all in the detergent field, including those concerned with the manufacture, packaging, application and processing of surfactants, as well as those supplying raw materials.

$7.10 in U. S. A. — $7.60 elsewhere

Send Check with Order

Add 3% Sales Tax if in New York City

TEAR OFF AND MAIL

MAC NAIR-DORLAND CO.
254 West 31st Street
New York 1, N. Y.

Enclosed is our check for $..... Please send the following book(s):

..... Modern Chemical Specialties, Price $7.25 in U. S. A.; $7.75 elsewhere
..... Soaps and Detergents, Price $9.00 in U. S. A.; $9.50 elsewhere
..... Synthetic Detergents, Price $7.10 in U. S. A.; $7.60 elsewhere

Company .....
Address .....
By .....

luminograms show how Nacconol improves alkaline-degreasing mixtures*

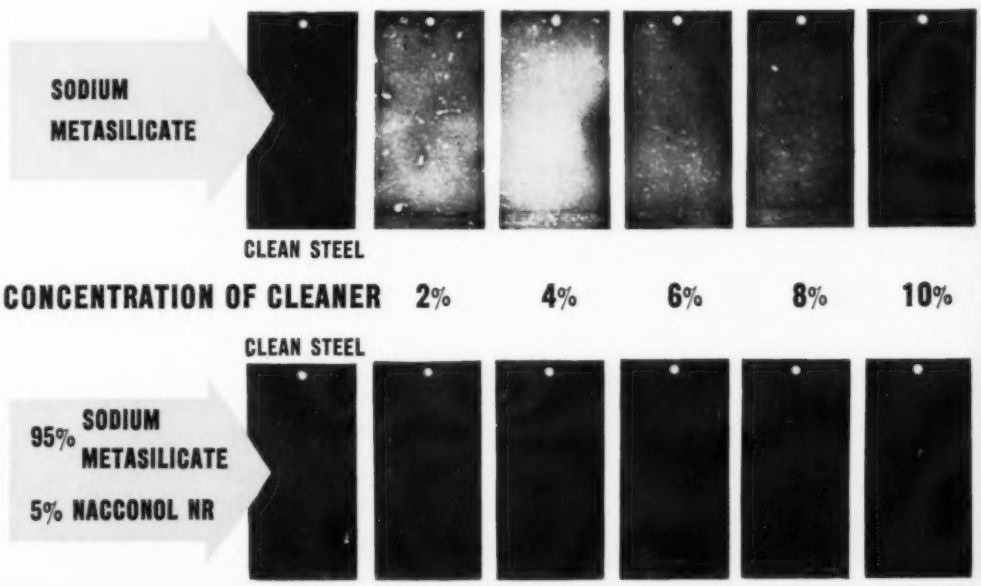
Scientific evidence confirms practical experience!

A little Nacconol goes a long way to cut the cost and improve the efficiency of metal degreasing compounds through: 1.Lower alkali concentration 2. Lower operating temperature 3. Shorter immersion period 4. Complete removal of oil residue, even in hard water.

About "Luminograms"

Test panels shown here were coated with mineral oil and then immersed in the cleaning solutions at 140° F for 10 minutes. When photographed under ultra-violet light, fluorescent oil residues invisible to the naked eye show clearly as white or grey areas, in proportion to the amount of oil residue on the panel. A perfectly clean panel, obviously, photographs black under ultra-violet light.

REMOVAL OF MINERAL OIL FROM STEEL
10 MINUTE IMMERSION AT 140° F



send for technical bulletins

Test results with various Nacconol-alkali mixtures on various metals are given in complete detail in a series of Nacconol Technical Reports. They may suggest ways to increase the sale of your mixtures to the metal working industries.

Remember — More Nacconol has been used for more years than any other synthetic detergent. No other detergent does so much for so little! Available in flake, powder and bead form. For prompt delivery and technical service on mixtures, write, wire or phone our nearest office.

*Reg. U. S. Pat. Off.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N.Y. • BOwling Green 9-2240

Boston 14, Mass., 150 Causeway St.	CApitol 7-0400	Richmond 19, Va., 8 North Fifth St.	Richmond 2-1930
Providence 3, R.I., 15 Westminster St.	DExter 1-3088	Columbus, Ga., Columbus Interstate Bldg.	Columbus 3-1029
Philadelphia 6, Pa., 200-204 S. Front St.	LOmbard 9-6382	Greensboro, N.C., Jefferson Standard Bldg.	GReenboro 2-2510
San Francisco 5, Cal., 517 Howard St.	SUtter 1-7507	Chattanooga 2, Tenn., James Building	CHattanooga 8-6347
Portland 9, Ore., 730 West Burnside St.	Beacon 1853	Atlanta 2, Ga., 140 Peachtree St.	CYpress 2821
Chicago 54, Ill., The Merchandise Mart	SUperior 7-3367	New Orleans 16, La., 714 Carondelet Building	Raymond 7220
Charlotte, 1 N.C., 201-203 West First St.	Charlotte 3-9221	Toronto 2, Canada, 137-143 Wellington St. W.	Elgin 8495

NOW AVAILABLE

Enormous numbers of tiny bubbles

an increased supply of

ANTARON® K-460

a high-foaming detergent

To make tableware sparkle

To make cosmetics smooth and lasting

The outstanding characteristics of Antaron K-460 . . . unusual high-foaming action; an efficient detergent; a good wetting agent; a lime-soap dispersant; an emulsifier. Antaron K-460 is a clear, slightly viscous liquid; neutral in pH value; non-irritating to the skin; soluble in all proportions in either hard or soft water. With its pleasant, mild odor, it is easily perfumed.

The indicated applications for Antaron K-460 . . . a high-foaming liquid detergent for dishwashing; a liquid hair shampoo; a detergent base for an all-purpose cleaning compound; a car wash; an emulsifier for cosmetics; a rug and upholstery shampoo; a bubble bath.

We invite your inquiry for samples and data sheets — without obligation. Extensive research staffs and facilities support the development and application of all Antara Products—available to work with you in the improvement of an existing product or the development of a new one. Kindly address your inquiry to Dept. 86.

To remove grease and road film

To restore the lustre of rugs and upholstery

ANTARA® PRODUCTS

DIVISION OF

GENERAL DYESTUFF CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

BRANCHES

Boston • Providence • Philadelphia • Charlotte, N. C. • Chicago • Portland, Ore. • San Francisco

IN CANADA: Chemical Developments of Canada Limited, Leaside, Toronto 17

TRADE NEWS

Selden Humphreys Dies

Selden Humphreys, 41, president of Tennessee Soap Co., Memphis, and a director of the Association of

SELDEN HUMPHREYS

American Soap & Glycerine Producers, Inc., died of a heart seizure while playing chess at his home the evening of June 2.

A member of one of Memphis' most prominent families, he founded Tennessee Soap Co. in 1936. He was educated at Memphis University School and Washington & Lee University. He began his business career shortly after leaving college, joining Humphreys-Godwin Co. and Coldpress Mill, Memphis, large cotton meal firm founded by his father, the late Hugh Humphreys. During the course of his career he held directorships in many mid-south companies. He was also president of Shelby Oil Mills of Shelby, Miss., and associate with Philip Hack in Tri-State Sales Co., a brokerage firm. At the time of his death he was a director of Humphreys-Godwin Co. and was vice-president of Factory Transport, Inc.

In addition to his wife and brother, he leaves two sons, Selden Humphreys, Jr. and Lewis Anderson Humphreys; two daughters, Miss Salie Love Humphreys and Miss Eleanor Martin Humphreys, and a sister, Mrs. George Race, all of Memphis.

In New Curtis Posts

Helene Curtis Industries, Chicago, recently named Wm. Engelhaupt as sales promotion manager, and elevated Arthur Adler to a vice-presidency.

New Gulf Soap Branch

Gulf Soap Corp., New Orleans, recently opened a branch warehouse and terminal in Gulfport, Miss., at quarters formerly used in the incinerator facilities of former Gulfport Army Air Base. The firm, which renders dead horse, mules, cows and hogs picked up from the Gulfport area, also has oil storage facilities. Harold Weiss is general manager of the Gulfport storehouse.

Eastham in Lever Post

The appointment of William K. Eastham as brand advertising manager for Lever Brothers Co., New York, was announced recently. He is in charge of advertising for "Lux" toilet soap, "Lux" flakes and "Silver Dust" brands. Prior to joining Lever, he had been associated with Whitehall Pharmacal Co. since 1945 as assistant advertising manager.

WILLIAM K. EASTHAM

Heads Armour Soap Sales

The appointment of J. R. Herd as general manager of the soap division of Armour and Co., Chicago, was an-

J. R. HERD

nounced recently by E. W. Wilson, vice-president. At the same time the naming of William E. Langford as manager of industrial soap sales, succeeding Thomas M. Galvin, who retired June 2, after 40 years' service with Armour, was announced. Mr. Herd, who was household soap sales manager, was formerly head of the company's general plant sales department. Mr. Langford has been with the company for 22 years in the industrial soap department.

Reinitz Soap Corp. Moves

Removal of its plant and offices to larger quarters at 36-14 35th St., Long Island City 6, N. Y., was announced recently by Reinitz Soap Corp. The relocation, which was completed June 25, necessitated closing the plant from June 8-25th. Reinitz was formerly located at 46-44 11th St., Long Island City. Its new quarters, leased from 50-18 Vernon Boulevard Corp., were formerly owned and occupied by Polak's Frutal Works. The new home of Reinitz Soap Corp. contains 25,000 square feet of floor

SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH

for instance...

THIS HAPPENS

450,000,000 TIMES A DAY!

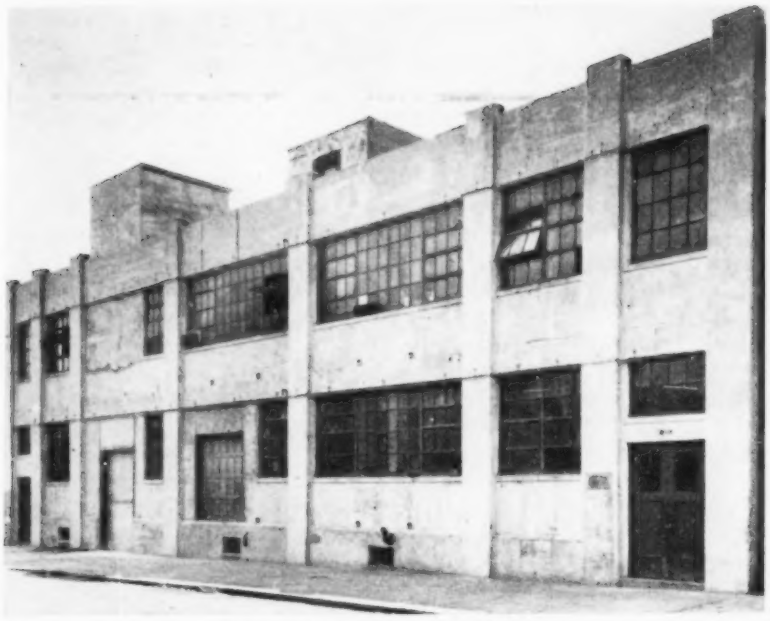
Where? Only in the United States. For in no other country in the world is soap used so lavishly. Elsewhere, soap is a prized luxury, to be employed sparingly. But here, it is a commonplace commodity easily and cheaply available to all.

This national phenomenon is a tribute to the productive and selling genius of the American soap industry. Mathieson is proud to be a supplier of caustic soda and other materials needed in the manufacture of soap and soap products.

The large-scale ability to supply industry with such essential raw materials is a result of Mathieson's constant research in the manufacture of basic heavy chemicals and their many specialized derivatives. And Mathieson service is marked by *dependability,* too—through ample capacity, wide diversity, and constant flexibility.

Mathieson
CHEMICALS

MATHIESON CHEMICAL CORPORATION, MATHIESON BUILDING, BALTIMORE 3, MARYLAND



The new home of Reinitz Soap Corp.

space. Reinitz makes private label soaps. Its announcement of the move was made in the form of a 6¾x8 inch post card, which carries an aerial view of the section of Long Island City, where the new plant is located, with the new site ringed and the nearest subway stations indicated.

Corn Cob Mesh Sizes

The mesh sizes of "Cocob" dry-processed powder produced by Agri-Indus Co., Columbus, O., by grinding maize corn cobs are numbers 10, 20, 40 and 60, not 10, 16 and 22, as was erroneously listed in a news item in our May issue.

Wyandotte Names Speel

Henry C. Speel was appointed recently director of the development department of Wyandotte Chemicals Corp., Wyandotte, Mich. He was formerly with General Dyestuff Corp., New York, and has had extensive experience in market research and market development work over the last 20 years with Atlas Powder Co., Wilmington, Del.; General Mills, Inc., Minneapolis; Alrose Chemical Co., Providence, R. I., and General Aniline and Film Corp., New York. He is directing all phases of market development and technical service for Wyandotte's new organic products.

HENRY C. SPEEL

Wrisley Employees Vote

Employees of the Allen B. Wrisley Co., Chicago, have voted, 284 to 213 in favor of the CIO Gas, Coke & Chemical Workers union as its bargaining agent in negotiations under National Labor Relations Board regulations.

Sobotka Joins Pharma-Craft

Jon Sobotka, formerly advertising and sales promotion manager of Lorr Laboratories, New York, and its foreign and domestic subsidiaries, was appointed recently as director of advertising and publicity for Pharma-Craft Corp., New York.

Kilbourn Joins A-H

Samuel V. D. Kilbourn, formerly secretary and head of the chemical department of Charles Hardy, Inc., New York, recently joined Arnold, Hoffman & Co., New York. He is associated with the firm's resale chemical and plastic divisions.

Thomas S. Nichols (right) whose resignation as Deputy Administrator of the National Production Authority, U. S. Dept. of Commerce, was announced recently, congratulates Francis J. Curtis (center) on leave as vice-president and director of Monsanto Chemical Co., St. Louis, and Kenneth B. Klipstein on leave from his post with Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J. They were sworn in as key members of the NPA staff. Mr. Curtis is assistant administrator heading the Chemical, Rubber and Forest Products Bureau and Mr. Klipstein is director of the Chemical Division of NPA. Mr. Nichols resumes his post as president of Mathieson Chemical Corp., Baltimore.

There is nothing like a Givaudan fragrance!

Givaudan soap fragrances give your soap sure appeal . . . they are the result of long experience in adapting odor materials to soap ingredients. For better sales, use Givaudan's knowledge, talent, know-how with soap perfumery.

For further information, write to Givaudan-Delawanna, Inc.
330 West 42nd Street, New York 18, N. Y.

Soap Anti-Trust Probe Under Way

THE Federal government's investigation of the soap industry to determine if a conspiracy to restrain trade and fix prices exists in violation of the Sherman Anti-Trust Act began before a Federal Grand Jury in Newark, N. J., June 19. The inquiry is expected to last for at least a year. Among those firms and organizations receiving Grand Jury subpoenas were: Lever Brothers Co., New York; Procter & Gamble Co., Cincinnati, Colgate-Palmolive-Peet Co., Jersey City, N. J., A. C. Nielson Co., Chicago marketing and research firm; Armour & Co., Chicago, and the Association of American Soap & Glycerine Producers, Inc., New York.

The inquiry, over which Chief Federal Judge Forman is presiding, began with a series of legal arguments over the matter of documents to be produced by the companies upon which subpoenas have been served. Chief objection to producing records as far back as January 1, 1924 through April 30 of this year is the unreasonableness of such a request subpoena. Almost 100 freight cars would be needed to carry the records and correspondence to Newark, according to the companies mentioned about. They are seeking to have the subpoenas quashed.

Representatives of the Justice Department, the anti-trust division of which is making the investigation, refused to comment on the purpose of the inquiry, nor would it identify concerns whose records were subpoenaed. Representatives of the F.B.I. would not say how many concerns would be investigated, but it is understood that the inquiry will involve all major soapers and distributors as well as some renderers.

The question of how and when the soap companies' records are to be produced was being decided by Judge Forman and he was to announce his decision on the question of those still under consideration on July 5.

In the hearings on the quashing of the subpoenas it was pointed out that an anti-trust Grand Jury probe in 1941 and 1942 resulted in the filing of criminal informations against several of the large soap companies. They pleaded *nolo contendere* (no defense) and were fined.

In arguing against charges of illegal search and seizure of the records and unreasonableness, impracticality and oppressiveness of the request, the Government attorney, Walker Smith, special assistant to Attorney General Howard McGrath, pointed out that in the present inquiry it is necessary to look into the records of the companies dating back to 1924 to determine how they operated before mergers and acquisitions. It is understood the Anti-Trust Division of the Federal Bureau of Investigation wants to examine the records of about 75 existing concerns and also those of firms which have ceased to exist in the last 25 years.

The government attorney is said to have agreed to confer with the companies on arrangements for delivery of records as wanted. It was not the government's idea to have all the records jammed into the Federal Building at one time, he said.

Judge Forman expressed concern over the safety of valuable records directing that the government return the originals to the owners immediately after examination of them was completed. Two rooms in the Federal Building have been provided for storing the records. The production of the records would cause irreparable injury to their business the soap firms contesting the subpoenas declared.

Ralph M. Stevenson, Midwest Sales Manager of Givaudan-Delawanna, Inc., New York, has been appointed chief of the Essential Oil, Flavor Materials and Perfume Materials Section, Chemical and Drugs Branch, Rubber, Chemical and Drugs Division, Office of Price Stabilization, Washington, D. C., it was announced July 1. He is a director of Givaudan-Delawanna, Inc., and makes his headquarters in Detroit.

Albert Petronella Dies

Albert Petronella, sales manager of Admiracion Laboratories, Newark, N. J., shampoo manufacturers, died recently of a heart attack at his home at 80 Riverside Drive, New York. He was 53 years old. He was a director of the National Beauty and Barber Manufacturers Association.

List "Scarce" Chemicals

Synthetic detergents are in "tight supply" and soaps are in "fair supply," according to a "List of Basic Materials and Alternates" issued recently by the National Production Authority. Giving the status of current relative availability of important materials, the list, in the form of a four page folder is broken down into three groups. "Group I, materials in very short supply," "Group II, materials in tight supply" and "Group III, materials in fair supply." Alternates should be selected for all materials in Group I, whenever possible, according to the list. Expanded use of materials in Group II by the industry should be avoided and materials in Group II should be used as alternates for those in Group I and II, the folder states.

Chemicals in very short supply (Group I) include Freon, glycerine, phenol, pine oils, sulfur and trichloroethane. Group II chemicals (in tight supply) include 1080, aldrin, ammonia, benzene hexachloride, borax, caustic potash, chlorine, DDT, synthetic detergents, dieldrin, ethylene glycol, fumigants, paradichlorobenzene, parathion, toxaphene. Among those chemicals listed in Group III (in fair supply) are carbon tetrachloride, chlordane, disinfectants, dithio carbamate fungicides, glycols (except ethylene glycol), naphthalene, rodenticides, rotenone, sabadilla, shellac, soaps, weed killers, wood preservatives.

DRYMET *

THE ECONOMICAL DETERGENT SILICATE

Cowles DRYMET, anhydrous sodium metasilicate, is the most highly concentrated form of sodium metasilicate available. It is more economical to use, on the basis of both Na_2O (alkalinity) and SiO_2 (silicate) than any other type of hydrated or anhydrous detergent silicate, either compounded or by itself. DRYMET contains no water of crystallization.

DRYSEQ *

THE ALL-PURPOSE DETERGENT SILICATE

Cowles DRYSEQ, anhydrous sodium sesquisilicate, is a medium pH alkaline cleaner which will do fast, dependable work at a low cost to the user. It is a white, free-flowing powder, quickly and completely soluble in hot or cold water—containing 56.75% Na_2O—making it an economical base material for compounding.

Cowles CHEMICALS

DRYORTH *

THE HEAVY-DUTY DETERGENT SILICATE

Cowles DRYORTH, anhydrous sodium orthosilicate, is a powerful, speedy, heavy-duty cleaner with valuable penetrating and wetting-out properties, reinforced dirt-removing power and unusual emulsifying action. It is an anhydrous, free-flowing powdered silicate containing not less than 60% Na_2O, which may also be used as an economical constituent of high pH cleaning compounds.

CRYSTAMET *

THE MEDIUM pH DETERGENT SILICATE

Cowles CRYSTAMET is a pure, perfectly white, free-flowing granular pentahydrate sodium metasilicate with the normal 42% water of crystallization. Suggested for compounding when it is desirable to lower the concentration of a finished product. Readily soluble—chemically stable—easy to handle. Can be used on medium pH jobs.

We'll be glad to send you our DRYMET File Folder containing complete technical information and suggested formulations.

*REG. U. S. PAT. OFF.

COWLES CHEMICAL COMPANY

HEAVY CHEMICALS DEPARTMENT • CLEVELAND 3, OHIO

Bush Ungerer Sales Head

The appointment of W. A. Bush as general sales and advertising manager of Ungerer & Co., New

W. A. BUSH

York, was announced recently by Kenneth G. Voorhees, president of Ungerer. Mr. Bush continues as secretary with the firm, with which he has been associated since 1937. I. H. Budd continues as first vice-president of Ungerer.

Nichols Leaves NPA

Thomas S. Nichols, deputy administrator of the National Production Authority, resigned recently to return to his post as president of Mathieson Chemical Corp., Baltimore. He is continuing to serve NPA on an advisory basis.

Ungerer Chicago Branch

The opening of a new branch office at 1791 West Howard St., Chicago, was announced recently by Ungerer & Co., New York. The branch is under the joint supervision of Ira Bennett and J. R. Martin. Mr. Bennett was formerly Ungerer's sales representative in the southern territory, with headquarters in Asheville, N. C. He was transferred to the New York office as a special sales representative in 1949, and last January moved to the Chicago office. He has been in the essential oil industry for almost 25 years.

Mr. Martin has been with Ungerer since 1945. He was transferred from New York to Chicago in 1948. Mr. Martin is covering accounts in Chicago, sections of Illinois and the entire state of Wisconsin. Mr. Bennett is representing the firm in Ohio, Michigan, Indiana, as well as in Chicago and other sections of Illinois.

Sales Execs Name Kelly

Leo J. Kelly, executive vice-president of the National Sanitary Supply Association was re-elected to a two-year term as a director of the Sales Executives Club of Chicago.

New P & G Calif. Plant

Procter & Gamble Co., Cincinnati, announced recently that it will build a new soap and synthetic detergent plant at Sacramento, Calif. First to be erected will be a small unit for the manufacture and packaging of granulated household washing products. This will be a six-story processing building and a two-story building to house a production department and warehouse. When in operation the facilities will provide employment for 150 to 200 workers.

The P & G plant in Long Beach recently celebrated its 20th anniversary. In a resolution passed by the County's Board of Supervisors the company was commended for its contributions to the economic and social welfare of the community. Paul A. Nichol, plant superintendent received the resolution. In doing so he pointed out that 85 of the firm's original staff of 150 were still employed at the plant, which has quadrupled its capacity in the last 20 years. Some 650 persons are now employed. P & G produces all of its soap and shortening requirements for its far western customers at the plant. A. R. Kidd, district sales manager, also spoke, and 20 year service pins were awarded to employees completing that period of employment.

The land and buildings of M. Werk Co., Saint Bernard, O., were purchased recently by Procter & Gamble Co. No price was disclosed. P & G is reported planning to use the facilities, which are located across the street from its plant, for storage space. It does not intend to carry on manufacturing on the premises. The Werk soap making equipment, supplies and other assets were sold at auction last month.

Hardesty Names Fischer

The naming of W. W. Fischer as sales manager and the completion of a modern fatty acid, glycerine,

W. W. FISCHER

stearic acid and red oil producing plant in Philadelphia were announced recently by Hardesty & Co., New York. Mr. Fischer has been associated with W. C. Hardesty, head of Hardesty & Co., for a number of years. The newly completed plant is part of the company's plans for expansion.

Synthesize Bulgarian Rose

The discovery of the constituents of Bulgarian otto of rose and its synthesization into a close reproduction of the natural product were announced recently by Felton Chemical Co., Brooklyn. The new synthetic perfume base has been designated "Otto of Rose Alternate F.C."

Edlund a Consultant

Roscoe C. Edlund, formerly manager of the Association of American Soap and Glycerine Producers, has recently opened offices at 250 Park Ave., New York, as a consultant to trade associations. He will conduct special surveys and offer counseling service to trade association groups. One of his first assignments has been to conduct a survey among the membership of the National Wholesale Druggists Association to determine what the members feel the future course of the association should be. Mr. Edlund will also continue his association with Fred Rudge, Inc., New York, of which firm he is a vice-president.

MAYPON • MAYPON • MAYPON • MAYPON • MAYPON

for sudsing and detergent purposes...

MAYPON SUPER K
and
MAYPON K
for
Household
and
Industry

USE...
MAYPON
PROTEIN—FATTY ACID—CONDENSATION PRODUCT

MAYPON 4C
for
Cosmetics

produced ONLY by
MAYWOOD CHEMICAL WORKS
MAYWOOD, N. J.

Samples
and
Literature

MAYPON • MAYPON • MAYPON • MAYPON • MAYPON

Soap IAC Discusses Price Rules

A MEETING of the Soap, Cleanser and Synthetic Detergent Industry Advisory Committee was held recently in Washington with representatives of the Office of Price Stabilization to discuss a proposed revision of the present manufacturers' Ceiling Price Regulation (CPR-10) covering household soaps, cleansers and synthetic detergents. At the meeting it was proposed to revise CPR-10 to include soaps sold for industrial, institutional and Government use as well as for household use and to clarify somewhat and define more clearly soaps, cleansers and synthetic detergents covered by the regulation.

CPR-10, issued March 8, covers sales by manufacturers of a wide range of soaps, soap products, cleansers and synthetic detergents customarily sold for household use. Ceiling prices are set at the highest price established by manufacturers on the basis of bona fide sales or offers for sales during the month of December, 1950.

Ceiling prices under the revised regulation would be on the same general level as under the present CPR-10 based on December 1950 sales or offers for sale. In addition, the revised regulation would provide that manufacturers of liquid and paste soaps and cleaning specialties using imported vegetable oils as ingredients may add any increased costs of such oils over dollars and cents prices specified in the regulation, or in the case of domestic vegetable oils, ceiling prices of which are set under CPR-6 (Fats and Oils), the manufacturer may add any authorized increase in such ceiling prices. Specific requirements for obtaining ceiling price adjustments under certain situations would be contained in the revised regulation.

The committee urged that the new regulation be issued at the earliest possible date and that the industry be relieved from pricing under the General Manufacturers' Regulation (CPR-22) effective July 2nd, on products and sales not now covered by CPR-10, and which will be covered under the proposed revised regulation. Members said it would work an undue hardship on many industry members if they are required to price under CPR-22 and shortly thereafter are required to reprice under the revised regulation. It was thought that some manufacturers might even suspend sales under the revised regulation as issued rather than price temporarily under CPR-22 until the new regulation is issued.

CPR-22 Date Postponed

Postponement of the effective date of CPR-22 for soaps, cleansers and synthetic detergents not covered in CPR-10 was announced by the OPS June 29. The postponement affects only industrial type soaps and cleansers, since household soaps are covered by CPR-10.

A General Overriding Regulation 13 which continues ceiling prices in effect on June 30, was issued by the OPS July 1. It has the effect of preventing possible rollbacks that might be brought about through CPR-22. Sellers of commodities subject to CPR-22 and the companion regulations who have not put those price ceiling regulations into effect on or before June 30, 1951, continue to price under those regulations for that commodity. This means that temporarily at least industrial soaps are out from under CPR-22.

The meeting was conducted by James A. Carey, Chief, Soap and Glycerine Section, Fats and Oils Branch, OPS.

Other OPS officials attending were: Edward Randa, chief, Edible Fats and Oils Section; Edgar Paul Boyko and Stanley D. Rose, legal staff; J. W. Kilcran, business analyst; Aleta Hansen, enforcement division; William R. Thomas, Jr., office for Industry Advisory Committee.

Members of the industry advisory committee are: T. J. Wood, vice-president, Procter & Gamble Co., Cincinnati; E. M. Finehout, vice-president, Los Angeles Soap Co., Los Angeles; C. G. Fox, president, Fels & Co., Philadelphia; M. L. Westering, mgr. soap dept., Swift & Co., Chicago; J. O. Brownell, gen. sales mgr., Lever Brothers Company, New York; J. A. Reilly, vice-president, Colgate-Palmolive-Peet Co., Jersey City, N. J.; A. C. Stoneman, exec. vice-pres., Purex Corporation, South Gate, Calif.; R. H. Young, Davies-Young Soap Co., Dayton, O.; H. J. Daigneault, National Aniline & Chemical Corp., New York; N. S. Dahl, general manager, John T. Stanley Co., New York; L. J. Gumpert, vice-president, B. T. Babbitt, Inc.; New York; H. E. Bramston-Cook, vice-president, Oronite Chemical Company, New York; J. L. Brenn, president, Huntington Laboratories, Huntington, Ind.; J. R. Herd, general manager, household soap division, Armour and Co., Chicago; A. G. Peck, Peck's Products Co., St. Louis, Missouri.

All members of the Committee were present, except J. L. Brenn of Huntington Laboratories and E. M. Finehout of Los Angeles Soap Co.

◆

C-P-P in Big Loan

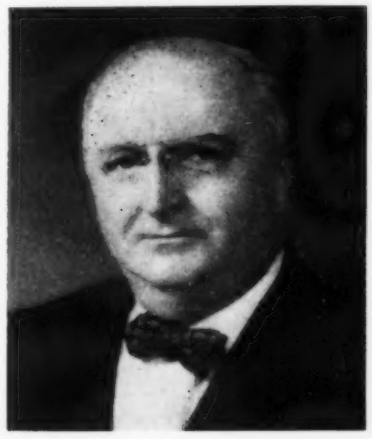
E. H. Little, president of Colgate-Palmolive-Peet Co., Jersey City, N. J. announced recently that the company has borrowed $25,000,000 from the Equitable Life Assurance Society, New York, on a three percent note payable over a period of 20 years. Dillon, Read & Co., New York, arranged the financing. Colgate-Palmolive-Peet Co., will use the funds for general corporate purposes.

◆

Kerrigan Honorary LLD

James J. Kerrigan, president of Merck & Co., Rahway, N. J., was the recipient of an honorary doctor of laws degree from National University of Ireland conferred July 12. The degree was awarded at a special ceremony at the university seat in Dublin, Ireland, attended also by Mrs. Kerrigan and their children. Mr. Kerrigan has been associated with Merck for the past 44 years, becoming president several years ago, during which time the company rose to become one of the world's leading producers of chemicals. The Kerrigans are expected to return to the United States early next month.

JAMES J. KERRIGAN



FORMULAE

for more soil-removing power at less cost

$3Na_2O, 2SiO_2$ to $Na_2O, 3.75SiO_2$

PQ Soluble Silicates are the close allies of soaps, alkaline cleaners and synthetic detergents, increasing the dirt-removing efficiency of all three. This improvement is evident in accelerated wetting, emulsification, deflocculation, and the prevention of redeposition of suspended dirt.

Yet, better detergency with PQ Silicates doesn't cost you any more. They actually offer you a saving over the higher priced straight synthetics. PQ Silicates are available in solution or in powders for mechanical mixtures or liquid admixtures.

Ask for copies of recent PQ studies of silicates' supporting action in synthetic detergents.

PHILADELPHIA QUARTZ COMPANY

1152 PUBLIC LEDGER BUILDING
PHILADELPHIA 6, PENNSYLVANIA

P.Q. SOLUBLE SILICATES

New Chemical Specialties Shown At Super Market Institute Trade Show

THE 14th annual convention and trade show of the Super Market Institute, held recently in Chicago, provided several manufacturers of chemical specialties for household use with an opportunity to make initial showings of new products. Older standard items were also featured.

Milner Products Co., Jackson, Miss., presented a new rat and mouse killer, "Anti-K," whose formula includes warfarin in oatmeal. Also shown was "Pine-Sol," a pine oil cleaner, which cleans, disinfects and deodorizes in one operation. In charge was H. S. Cohoon, vice-president, from Jackson, assisted by Chas. M. Dawson, Chicago district manager, and W. W. Kearney.

O-Cedar Corp., Chicago, presented "Dri-Glo," a recently introduced household polish containing silicones. Also shown were O-Cedar sponge mops, floor waxes, dust mops, etc., with R. E. Smith, advertising manager, in charge.

Sterling Co., St. Louis, Mo., attracted attention of grocery store buyers to their line of "Miracle" moth balls, flakes and crystals with the statement: "Your customers purchase over 30 million pounds of moth preventives annually." Also shown were "Puro," refrigerator conditioner and other household deodorants. R. L. Saeks in charge.

Wilbert Products Co., New York, announced several new items, including furniture and auto polishes, and a liquid floor wax, which include silicones. New package designs for some products were shown and prominent in the display were "Wilbert's No-Rub" window cleaner, shoe polish, etc. Dealers were told of a dealer contest with a chest of 28 tools worth $50 as a prize for salesmen who dispose of 100 cases of assorted Wilbert products. In charge was Sidney J. Weinberger, vice-president for sales.

H. Hertzberger & Son, Inc., 62 year old New York company, introduced a new line of brushes, with polyethylene plastic bristles in varied colors. Ira Hertzberger, vice-president was in charge, assisted by Louis Meltzer, sales manager.

Boyle-Midway, Inc., New York, introduced their glass cleaner, "Aeromist," in a new plastic squeeze bottle dispenser. Also shown was "Woodbrite," a silicone furniture polish, a room deodorizer in a plastic squeeze bottle, "Black Flag" insecticides, "Aerowax," etc. George Shepard, Chicago divisional sales manager, directed the presentation.

Gold Seal Co., Bismarck, N. D., announced that its "Snowy (powdered) Bleach" is soon to be available for national distribution after limited sales in midwestern states for some time. Also shown was "Glass Wax" window cleaner, "Wood Cream," self polishing floor wax, paste wax, etc. Harold Schaffer, president, was in charge, with Wm. Penick, research director, and Frank Gowan, Chicago sales representative, assisting him.

S. C. Johnson & Son, Inc., Racine, Wis., introduced "Pride," its new furniture wax which requires no polishing. Also shown were: "Glo-Coat" floor wax and other products. R. W. Griffith, north central regional manager was in charge.

Oakite Products, Inc., New York, demonstrated the new "Handi-Squeeze" pouring spout for the "Oakite" household cleaner container. Frank A. Conolly, manager, package division, and his assistants, Preston Levy, Chicago division superintendent, and Stuart Burgh, Chicago production department, presented the company's mass display building service and carnival sales promotion plans. In one Los Angeles super market, Mr. Conolly said, 31½ tons of Oakite in packages were recently used to build one of the largest mass displays in the company's 42-year history. Supporting this sales effort, he said, Oakite also advertises in 300 newspapers and has programs on 30 radio and television stations.

Cameo Corp., Chicago, featured their recently introduced "Cameo" copper cleaner, along with the older, all purpose Cameo household scouring compound. The company is now at home in its own new factory building at 4600 S. Tripp St., Chicago, where adequate production facilities are now available for nationwide distribution, it was announced by Harold W. Carlson, sales manager.

Renuzit Home Products Co., Philadelphia, featured its "Renuzit" home dry cleaner, spot and stain remover and various other items, with S. H. Sauber, sales manager, and Earl Scott, assisant to the president, in charge.

Calgon, Inc., Pittsburgh, Pa., presented its "Calgonite" water conditioner in small packages for household use, with C. E. Cottrell directing demonstrations.

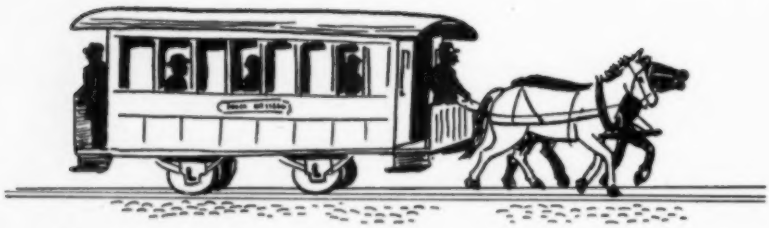
Simoniz Co., Chicago, displayed a self polishing floor wax, also its car cleaners, chrome polishes and household scouring and polishing products. T. Walsh, district sales manager, in charge.

Allen B. Wrisley Co., Chicago, featured its "Townley" shampoo and "Townley" hand lotion, the distribution of which has been extended recently to the grocery store field. Also shown were "Townley" bubble bath crystals, a water softener, Wrisley bath size pine soap, "Olivilo" soap and an eight-cake assortment of Wrisley toilet soaps in reusable plastic bag. This latter item is now in its third year and growing more popular constantly, said R. E. Tyriver, national sales manager.

Other soap makers among the more than 300 exhibitors at the Super Market Institute show included Colgate-Palmolive-Peet Co., Jersey City, N. J., Procter & Gamble Co., Ivorydale, O., and Lever Bros. Co., New York, each of which had colorful displays of their familiar laundry and toilet soap products.

CSA Golf Dates

The next golf outing of the Chemical Salesmen's Association of the American Chemical Industry will be held Thursday, July 17 at Winged Foot Country Club, Mamaroneck, N. Y. The final two meetings of the season will be held August 14 at Nassau Country Club, Glen Cove, Long Island, and September 11 at Montclair Golf Club, Montclair, N. J.



Since the Days of the "Horse Car"...

Soapers have depended on WH&C ...for Raw Materials of Quality

SINCE 1838, we've been supplying the nation's "soapers" with basic raw materials.

CHECK YOUR NEEDS FROM THIS LIST

VEGETABLE OILS

Babassu
Castor
Cocoanut
Corn
Cottonseed
Olive
Palm
Peanut
Sesame
Soybean

ANIMAL FATS

Sperm Oil
Oleo Stearine
Lard Oil
Neatsfoot Oil
Grease
Tallow
Lanolin

FATTY ACIDS

Red Oil
Tall Oil
Tallow
Stearic Acid
Hydrogenated Fatty Acid
Cottonseed and Soybean Fatty Acids

ALKALIES

Caustic Soda, Solid, Liquid, and Flake
Soda Ash, Light and Dense
Carbonate of Potash, calcined and hydrated
Calcium Chloride
Tri Sodium Phosphate
Tetra Pyro Phosphate
Quadrafos Granular and Beads—a stable polyphosphate for water conditioning and mild but effective detergency.

SILICATE OF SODA—Liquid powdered and solid.

META SILICATE—"Metso"* Granular.

METSO* DETERGENTS—55, 66, 99.

MAYPONS—Unique surface active agents; prolific foam; high detergency and emulsifying powders; suitable for cosmetic and industrial use.

AIR DRYETTES • CHLOROPHYLL

** Reg. U. S. Pat. Off., Phila. Quartz Co.*

Let us mix your dry private formulas

Established 1838

Welch, Holme & Clark Co., Inc.

439 WEST STREET NEW YORK 14, N. Y.

Warehouses in New York and Newark, N. J.

Peterson Heads N.O.C.S.

W. A. Peterson, Colgate-Palmolive-Peet Co., Jersey City, N. J. was elected president of the Northeast Oil

W. A. PETERSON

Chemists' Society, at its final spring meeting, held June 5 at the Building Trades Employers Association, New York. Other officers are as follows: vice-president, H. W. Ladyn, Armour & Co., New York; treasurer, R. C. Hussong, Spencer Kellogg & Sons, Inc., Edgewater, N. J.; directors for two-year terms, F. G. Shea, C. F. Simonin's Sons, Inc., Philadelphia and G. A. O'Hara, Congoleum-Nairn, Inc., Kearny, N. J. E. A. Sigworth, West Virginia Pulp & Paper Co., New York, was re-elected secretary. Peter Kalustian, of E. F. Drew & Co., New York, the retiring president, automatically becomes a member of the board of directors, of which M. F. Lauro, N. Y. Produce Exchange and C. V. Servell, formerly of Lever Brothers Co., New York, also are members. A talk on a "Preliminary Study of the Effect of Maleic Anhydride and Fumaric Acid on Linseed Oil" by S. S. Gutkin, Falk & Co., Edgewater, N. J., was given at the meeting.

Strike Halts Lever Plant

Construction work on the synthetic detergent manufacturing plant of Lever Brothers Co., New York, in Pagedale, Mo., was virtually stopped recently after a walkout by 25 AFL building laborers. An official of Bechtel Corp., construction firm, said the laborers' dispute was with AFL carpenters over who was to carry forms used to make molds for concrete. The official is reported to have said about 100 carpenters were laid off shortly after the laborers left. There were no pickets and a small excavating crew continued working.

A Bechtel representative went to Chicago to confer with representatives of the carpenters and laborers in an attempt to settle the dispute. The plant is expected to cost about $5,000,000.

E.O.A. Offices Moved

The offices of the Essential Oils Association of the U. S. A. were moved recently to the Hotel Grammercy Park, 2 Lexington Ave., New York, according to Ray C. Schlotterer, secretary.

Fleming P&S Vice-President

Myron T. Fleming has recently been named vice-president in charge of sales and engineering for the dryer division of Proctor & Schwartz, Inc., Philadelphia, succeeding George W. O'Keefe who held the post until his death in February of this year. Mr. Fleming, sales manager of the company since early 1950, has been associated with Proctor & Schwartz since 1935. A graduate of Drexel Institute of Technology, he worked first in the dryer research department of the company and then in dryer engineering. During World War II he served as a lieutenant colonel in the U. S. Army. Returning to Proctor & Schwartz after the war he worked as a sales engineer until early 1950, when he was named sales manager.

MYRON T. FLEMING

Fanning Lanolin Plant

The completion of a plant at 325 Doremus Ave., Newark, N. J., for the production of lanolin, wool fat

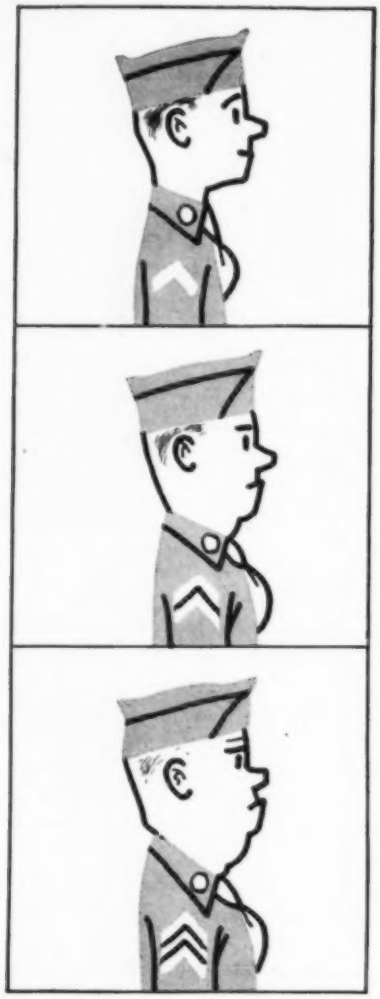
FRANK G. FANNING

and its derivatives and chemical specialties and the removal of its offices from 50 E. 42nd St., New York, to the Newark plant was announced recently by Frank G. Fanning, head of the company bearing his name. The plant, which is now in production, has a rated refining capacity of approximately 500,000 pounds monthly. It is located on a railroad siding and consists of two buildings of over 14,500 square feet, with additional outside storage facilities covering 10,000 square feet.

Mr. Fanning founded his own company in 1946, after having been with N. I. Malmstrom Co., Brooklyn, for over 26 years. He is a past president of the Salesmen's Association of the American Chemical Industry.

New Lab Glass Cleaner

A new cleaning compound for washing laboratory glassware was announced recently by Chemical Manufacturing & Distributing Co., Easton, Pa. The new compound, "Lab-Kleen Concentrate," includes a new type sequestering agent containing complex polyphosphates. It is said to have good penetrating qualities, rinse freely and be easy and economical to use. Viscosity is maintained at approximately 170-175 Stormer seconds. The new concentrate has a pH of 8.16 in a two percent solution. It is claimed to be practically odorless.



Carbose promotes soap detergency, too

You're probably familiar with the job Carbose* can do for synthetic detergents. Well, it lends a helping hand to soaps, too.

Both built and unbuilt soaps will have increased soil removal and whiteness retention when Carbose is included in the formula. As little as from 3 to 5% Carbose added to a soap may increase its soil removal properties by 40% . . . may double its whiteness retention.

In a built soap, Carbose increases the amount of builder which may be added without sacrificing whiteness retention properties. Above a 3% concentration, it increases soil removal. In any concentration, it increases whiteness retention. We've got the figures to back this up . . . and we'd be glad to send them to you.

*Reg. U. S. Pat. Off.

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE
HYDROGEN • DRY ICE • SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE • PROPYLENE
DICHLORIDE • AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

WYANDOTTE CHEMICALS CORPORATION
Wyandotte, Michigan • *Offices in Principal Cities*

Wyandotte
REG. U. S. PAT. OFF.

Soapers at NARGUS Show

Soap and chemical specialties manufacturers were lavish in planning the presentations of their products before National Association of Retail Grocers, which held its 52nd annual convention at Chicago's Navy Pier from June 9 to 15. The accompanying photographs show some of the highlights presented by these manufacturers.

At the Calgon booth, (top, right) a test tube demonstration was used to show the action of the product in hard water. The tube at right contains plain soap and water. The center one has an identical amount of soap, water and a standard type softener. The third has "Calgon" and one-third as much soap as the other two. Conducting the demonstration, facing the camera, are Brent Webb (left) of Callerman and Company, Chicago distributors for Calgon, and A. D. Williams of Calgon's sales division.

* * *

William D. Tate, (center photo) assistant district manager of Armour's household soap division, and Ingeborg Jorgensen, Miss Dial, were part of the welcoming committee at the Armour booth. The moving sign in the model cake of "Dial" soap told grocers attending the convention of promotions planned for Armour soaps.

* * *

Frank A. Conolly, (bottom right) manager of Oakite's packaging division (left), was on hand to demonstrate the recently developed "Handi-Squeeze Spout." He was assisted by Lora Peiper, demonstrator and Preston Levy, Chicago district sales manager.

* * *

Hospital Show Exhibitors

V. S. Peterson, midwest manager, E. I. du Pont de Nemours & Co., Wilmington, Del., addressed a conference of hospital laundry managers during the 21st annual meeting of the Tri-State Hospital Assembly in Chicago, early in May.

Exhibitors of chemical specialties and equipment were: Hillyard Sales Co., St. Joseph, Mo.; Huntington Laboratories, Inc., Huntington, Ind.; Midland Laboratories, Dubuque, Ia.; Vestal, Inc., St. Louis.

HAVE YOU TRIED OUR

YLANG TAMATAVE

YLANG TAMATAVE SUPERIOR

AND

VETIVERT 2131

IF NOT, ASK FOR SAMPLES AND QUOTATIONS.

Roure-Dupont, Inc.

ESSENTIAL OILS, AROMATIC CHEMICALS AND PERFUME BASES
GENERAL OFFICES
366 MADISON AVENUE, NEW YORK 17, N. Y.

CHICAGO BRANCH
510 NORTH DEARBORN ST.

LOS ANGELES BRANCH
5517 SUNSET BOULEVARD, HOLLYWOOD

SOLE AGENTS IN UNITED STATES AND CANADA FOR
ROURE-BERTRAND FILS et JUSTIN DUPONT
GRASSE (A. M.) FRANCE — ARGENTEUIL (S & O) FRANCE

For better compounds, use the tested best!

D-40 DETERGENT

ORONITE CHEMICAL COMPANY

THE NAME TO WATCH IN CHEMICALS ®

Compounds containing D-40 are being used throughout industry for everything from metal cleaning to fruit and vegetable washing. Get full information from any of the Oronite offices listed below.

Detergents from Oronite have proved their performance and quality in household and industrial cleaning compounds of all kinds. Continued and growing use by leading processors, compounders and re-packagers proves the efficiency and dependability of our detergent materials.

When you switch to detergents made by Oronite, you're getting the tested best.

Here are three of many uses in which products containing D-40 detergent excel:

2211

Household Cleansers
In scouring cleansers, compounders find D-40 makes their products better and faster cleaners.

Dairy Equipment Washing
An excellent wetting agent, as well as detergent, D-40 in dairy equipment cleaning compounds helps prevent the formation of milkstone.

Car Washing
Car washing products containing D-40 work fast, leave no film to dull the finish, rinse away quickly and easily.

ORONITE CHEMICAL COMPANY

38 SANSOME ST., SAN FRANCISCO 4, CALIF. — STANDARD OIL BLDG., LOS ANGELES 15, CALIF.
30 ROCKEFELLER PLAZA, NEW YORK 20, N.Y. — 600 S. MICHIGAN AVENUE, CHICAGO 5, ILL.
824 WHITNEY BLDG., NEW ORLEANS 12, LA.

do these

ETHYL AMINES

fit into YOUR product picture?

How you can use them . . .

ETHYL AMINE*

- as a volatile alkali in process industries.
- as an intermediate for making:
  - emulsifiers
  - plasticizers
  - dyestuffs
- as a deflocculating agent in manufacture of ceramics.

DIETHYL AMINE

- as an intermediate for making:
  - rubber accelerators
  - insecticides
  - pharmaceuticals
  - dyestuffs
- its sulfamic acid salt is an effective flame-retardant plasticizer for paper.

TRIETHYL AMINE

- as an inhibitor for chlorinated solvents.
- as an anti-livering agent in urea-and melamine-based enamels.
- for solubilizing 2,4-D, a selective herbicide. Only 101 lb. of Triethyl Amine needed to neutralize 221 lb. of 2,4-D.

CARBIDE AND CARBON CHEMICALS COMPANY

A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.

Offices in Principal Cities
In Canada:
Carbide and Carbon Chemicals, Limited, Toronto

All three of these amines are available in commercial quantities. One of them may be just the answer to your product or process problem. Investigate them now by asking for samples and information on your company letterhead. Be sure to ask for technical bulletin F-7408A, "Alkyl Amines."

OTHER ALKYL AMINES

When you are considering alkyl amines, keep in mind that CARBIDE *also supplies n-Butyl, Di-n-Butyl, Isopropyl, Diisopropyl, 2-Ethylhexyl, and Di (2-Ethylhexyl) amines. Samples and technical data are available to help you evaluate them.*

**Commercial grade is a 70% aqueous solution.*

NINOL

Wetting Agents, Detergents, Emulsifying Agents, Fine Chemicals

for

FOAM STABILITY

in SYNSOAP cleaners . . . .*

NINOL 1281 ***a non-ionic detergent especially developed for*** **BLENDING WITH SOAPS**

Your scrub cleaners can have the best features of both soaps and synthetics — *at lower cost!* NINOL 1281 makes it easy to produce a modern SYNSOAP* cleaner with good foam stability . . . viscosity . . . non-corrosiveness . . . combined with excellent detergency and rinsibility.

*SYNSOAP = SYNTHETICS + SOAP

Other NINOLS are also available for such profitable uses as . . . Thickening coconut soap solutions . . . Blending with quaternaries for bactericidal cleaners . . . Laying dust in powdered cleaners, etc.

MAIL THIS COUPON TODAY!

NINOL LABORATORIES, Dept. S,
1719 So. Clinton St., Chicago 16, Ill.

Gentlemen:

Please send me, at once, full information about the use of

NINOL 1281

in formulating "Synsoap" scrub cleaners, together with a working sample.

NAME _____

TITLE _____

COMPANY _____

STREET & NO. _____

CITY _____

ZONE _____ STATE _____

NINOL

NINOL LABORATORIES

1719 SO. CLINTON · CHICAGO 16 · PHONE CHESAPEAKE 3-9625

Now...

a basic lavender fragrance especially suited to the soapmaker's needs

LAVANDALOL

a stable, lasting aromatic — effective as the natural oil — at a fraction of the cost

Our chemists have now achieved an inexpensive aromatic embodying the best and most useful characteristics of natural lavender.

LAVANDALOL helps solve the riddle of maintaining quality in the face of increasing material costs.

Write us on your firm's letterhead for a sample.

schimmel **& co., inc.**
601 west 26th street, new york 1, n. y.

NEW TRADE MARKS

THE following trade-mark was published in the May 29 issue of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, a fee of ten dollars must accompany each notice of opposition.

Sprayet—This for filled germicide and insecticide dispensers in the nature of valved pressure type canisters. Filed Jan. 15, 1947 by Knapp-Monarch Co., St. Louis. Claims use since Dec. 27, 1946.

The following trade marks are published in compliance with section 13 (a) of the Trade Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of $25 must accompany each notice of opposition.

Marter-white—This for insecticide extender. Filed Aug. 20, 1949 by Marter Mining Co., Los Angeles. Claims use since May, 1942.

Dapex—This for moth proofing compound. Filed May 17, 1950 by Davison Chemical Corp., Baltimore. Claims use since Sept. 29, 1949.

Lan O Soft—This for cleaning powder. Filed Dec. 12, 1949 by Lan-O-Sheen, Inc., St. Paul, Minn. Claims use since Oct. 24, 1949.

Pennsalt—This for insecticides. Filed June 23, 1948 by Pennsylvania Salt Manufacturing Co., Philadelphia. Claims use since Oct. 29, 1946.

Heller's—This for insecticide preparations. Filed Dec. 9, 1948 by B. Heller & Co., Chicago. Claims use since 1894.

National—This for surface-active ingredients for cleansing preparations. Filed May 5, 1949 by Allied Chemical & Dye Corp., New York. Claims use since November, 1905.

Oilzorb—This for granular or powdered compositions for absorbing oil and grease from garage floors, etc. Filed March 10, 1950 by Mil-Kex Specialty Co., Milwaukee. Claims use since Jan. 12, 1948.

Fusinol—This for fungicide for local application. Filed July 9, 1948 by C. B. Kendall Co., Indianapolis. Claims use since Dec. 2, 1933.

Duozine—This for bacteriostatic preparation. Filed Oct. 2, 1948 by Abbott Laboratories, North Chicago. Claims use since Sept. 16, 1948.

Acrizane—This for substituted acridine used as a germicide for mucous membranes, etc. Filed Nov. 9, 1949 by Abbott Laboratories, North Chicago. Claims use since Oct. 5, 1949.

Otosulamyd—This for sulfonamide preparation for local antisepsis. Filed Aug. 31, 1950 by Schering Corp., Bloomfield, N. J. Claims use since June 15, 1950.

Sootex—This for cleaning compound in powdered form for removing soot, etc., from stoves, furnaces, chimneys and flues. Filed Aug. 30, 1949 by Hysan Products Co., Chicago. Claims use since April, 1941.

Narico—This for jewelry cleaning fluid. Filed Sept. 29, 1949 by National Ring and Leather Corp., Mansfield, O. Claims use since June 30, 1949.

Lepco—This for industrial cleaning compounds for cleansing steel and metal articles. Filed Nov. 15, 1949 by V. B. Punderson Co., Cleveland. Claims use since January, 1945.

Almor—This for kit of selected cleaning fluids in separate bottles for use in cleaning textile fabrics. Filed Dec. 19, 1949 by Almor Rug and Furniture Cleaners, Chester, Pa. Claims use since Sept. 15, 1949.

Comp—This for detergent compositions. Filed Apr. 5, 1950 by Fuld Brothers, Inc., Baltimore. Claims use since Mar. 20, 1950.

Silikar—This for cleaning preparation for automobiles. Filed Apr. 15, 1950 by Karseal Corp., Los Angeles. Claims use since Feb. 8, 1949.

Glamorene—This for cleaning composition for use on rugs, carpets, nap fabrics, etc. Filed June 5, 1950 by Jerclaydon, Inc., Miami Beach, Fla. Claims use since Sept. 15, 1949.

Plane Bleach—This for cleaning compound. Filed Nov. 1, 1949 by Plane Bleach Co., Manchester, N. H. Claims use since Oct. 4, 1949.

Osmose—This for wood preservatives. Filed Jan. 19, 1950 by Osmose Wood Preserving Co. of America, Inc., Buffalo, N. Y. Claims use since Jan. 18, 1935.

Orthorix—This for insecticides. Filed Mar. 20, 1950 by California Spray-Chemical Corp., Richmond, Calif. Claims use since June, 1949.

Merpol—This for scouring agents for textiles, etc. Filed Sept. 9, 1950 by E. I. du Pont de Nemours & Co., Wilmington, Del. Claims use since Jan. 23, 1940.

Rosecillin—This for toothpaste. Filed Mar. 14, 1949 by Hughes & Carroll, Prescott, Ariz. Claims use since June 16, 1944.

Vivaudou—This for dentifrices. Filed June 7, 1950 by Nestle-Lemur Co., New York. Claims use since 1914.

Renee Frelon—This for shampoo. Filed Dec. 23, 1947 by Renee Frelon, Inc., Chicago. Claims use since May 10, 1947.

Rulon's—This for cleaning compounds in the form of synthetic alkaline detergents. Filed Aug. 10, 1949 by Rulon Laboratories, Inc., Burlington, Ia. Claims use since June 15, 1942.

Chez—This for household cleaner. Filed Oct. 11, 1949 by Danel Products Co., Summit, N. J. Claims use since May 11, 1949.

Burnex—This for hand, face and skin soaps. Filed Apr. 5, 1950 by Burnex Products Co., Newark, N. J. Claims use since Feb. 1, 1926.

Both—This for detergent compositions having disinfecting properties for floors, walls, furniture, etc. Filed May 3, 1950 by Fuld Brothers, Inc., trading as George Stuart Co., Baltimore. Claims use since Apr. 24, 1950.

Reel—This for laundry detergent for use in automatic washing machines. Filed May 16, 1950 by Abso-Clean Chemical Co., Detroit. Claims use since April 19, 1950.

Shoam—This for hair shampoo. Filed Aug. 10, 1950 by Romak Laboratories, Inc., New York. Claims use since June 15, 1950.

Dux-Tox—This for inhibitor for use on termites and other insects. Filed Oct. 20, 1948 by Forman, Ford and Co., Minneapolis. Claims use since Apr. 1, 1946.

Stanhome—This for chemical disinfectant. Filed Oct. 19, 1949 by Stanley Home Products, Inc., Westfield, Mass. Claims use since Sept. 19, 1949.

Aquadyne—This for chemical compound in casule form for use in dust control. Filed Jan. 6, 1950 by Aquadyne Corp., New York. Claims use since Nov. 16, 1949.

Moth Chaser—This for insecticides. Filed Feb. 8, 1950 by Van Brode Milling Co., Clinton, Mass. Claims use since Dec. 2, 1949.

Larvacide—This for fumigants for use against insects, slugs and rodents. Filed Apr. 4, 1950 by Innis, Speiden & Co., New York. Claims use since Feb. 23, 1926.

Drop Dead!—This for insect spray. Filed Apr. 21, 1950 by Drop Dead Co., Long Beach, Calif. Claims use since Mar. 18, 1950.

Harris—This for chemically prepared food for cockroaches and water bugs. Filed Apr. 27, 1950 by P. F. Harris Mfg. Co., North Little Rock, Ark. Claims use since February, 1923.

Lin-Dairy—This for insecticide. Filed May 6, 1950 by Ralston Purina Co., St. Louis. Claims use since Feb. 14, 1950.

Spray Maid—This for moth proofer. Filed July 13, 1950 by Connecticut Chemical Research Corp.,

(*Turn to Page* 98)

WANTED:
PERPLEXING DETERGENT PROBLEMS

...to be solved by

ULTRA QUALITY PLUS DETERGENTS

Flake...Powder...Spray-dried Beads...Liquid...Paste...Slurry...

What is your detergent problem? Is it one of pricing . . . meeting and outmatching competition? Are you searching for the particular detergent that best serves *your* purpose? Do you require special formulations?

ULTRA's modern plant and staff of specialists are geared to handle unusual problems.

For example, a national organization wished to gain consumer volume on their household detergent specialty. ULTRA specialists provided new sales features by developing a detergent formulation that did not lump or cake . . . met an exact specific gravity . . . had controlled wetting time . . . was odorless and uniform in appearance.

Annual sales increased from 120,000 pounds to over a million within two years.

Whatever *your* detergent problems, perhaps we can solve them with the extra advantages of ULTRA DETERGENTS. Why not write or phone today?

SULFRAMIN* AB-40 FLAKES
SULFRAMIN* AB-40 POWDER
SULFRAMIN* E LIQUID
SULFRAMIN* SPRAY BEADS
SULFRAMIN* AB CONCENTRATE FLAKES
SULFRAMIN* AB CONCENTRATE POWDER
SULFRAMIN* KE LIQUID
SULFRAMIN* AB SLURRY

*TRADEMARK REG. U. S. PAT. OFF.

ULTRA CHEMICAL WORKS, INC.

PATERSON, N. J. • LOS ANGELES, CALIF. • JOLIET, ILL.

ULTRA Chemical WORKS

BIDS AND AWARDS

Toilet Soap Bids

In a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, New York, the following bids were received on an unspecified quantity of toilet soap for Norfolk, Va.; Crystal Soap & Chemical Co., Philadelphia, 11.43 cents; Davies-Young Soap Co., Dayton, O., 15.75 cents; E. F. Drew Co., New York, 12.55 cents; Harley Soap Co., Philadelphia, 12.9 cents.

F. S. S. Soap Award

The award on an unspecified quantity of soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D.C., went to Fitzpatrick Bros., Chicago, with bids of 13.81 cents a pound on item 51-S-1430, 6.88 cents on P-2550 and to the Iowa Soap Co., Burlington, Ia., with a bid of 14.75 cents a pound on item 51-S-1674.

Sweeping Compound Award

Sanitary Soap Co., Paterson, N. J., received the award on a monthly supply of 30,000 pounds of sweeping compound with a bid of 2.7 cents a pound in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C.

Bids on Wax Floor Cleaner

The following low bids were received on an unspecified quantity of wax floor cleaner in a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, New York, specifying delivery at (a) Boston, (b) Brooklyn, (c) Philadelphia, (d) Great Lakes, (e) San Diego, (f) San Francisco, (g) Vallejo, Calif., (h) Seattle: Harley Soap Co., Philadelphia, all or none, a) 69 cents, b) 66 cents, c) 60 cents, d) 75.5 cents, e) 87 cents, g) 89 cents, h) 89 cents; J. A. Tumbler Labs., Baltimore, a) 73.9 cents, b) 69.9 cents, c) 68.4 cents, d) 84.4 cents, e) 99.5 cents, f) 99.5 cents; R. M. Hollingshead Corp., Camden, N. J., all or none, a) 74.1 cents, b) 71.8 cents, c) 64.9 cents, d) 87.3 cents, e) 88.6 cents, f) 89.8 cents, g) 96.8 cents, h) 90.5 cents.

AQC Soap Award

Fitzpatrick Bros., Chicago, received the award on 11,760 pounds of laundry bar soap with a bid of 10.46 cents a bar in a recent opening for miscellaneous supplies by the Army Quartermaster Corp., Wash., D. C.

Liquid Soap Bids

Among the bidders on an unspecified quantity of liquid soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C., were the following: Harley Soap Co., Philadelphia, item 1a, 54.5 cents a gallon, item 1b, 57 cents, item 2, 42.5 cents; Solarine Co., Baltimore, item 1, 53.83 cents; National Chemical Laboratories of Philadelphia, Pa., item 1, 60.2 cents, item 2, 38.2 cents; Crystal Soap & Chemical Co., Philadelphia, item 1, 80 cents, item 2, 39.5 cents.

Floor Wax Bids

Bids on an unspecified quantity of floor wax were received from the following in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C.: John C. Stalfort & Sons, Baltimore, 24 cents a pound; Buckingham Wax Co., Long Island City, N. Y., 20.9 cents; Twin City Shellac Co., Brooklyn, 20 cents; and E. H. Walker Supply Co., Washington, D. C., 25 cents.

Laundry Soap Awards

The following awards on an unspecified quantity of high titer laundry soap chips were announced by the Army Quartermaster Corp in a recent opening for miscellaneous supplies: National Milling & Chemical Co., Philadelphia; Gillam Soap Works, Fort Worth, Tex., Iowa Soap Co., Burlington, Ia.; Lee Soap Co., Denver; Stahl Soap Corp., Brooklyn; Procter & Gamble Co., Cincinnati, O. Continental Soap Corp., Chicago, received the award on an unspecified quantity of low titer laundry soap powder.

P. O. D. Wax Bids

Low bids on 5,000 gallons of wax in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C., were submitted by the following: Trio Chemical Works, Brooklyn, N. Y., 60 cents; R. M. Hollingshead Corp., Camden, N. J., 64 cents; Kem Products, Brooklyn, N. Y., 55 cents; Apter Bros., Baltimore, Md., 62 cents; and Buckingham Wax Co., Long Island City, N. Y., 62.9 cents.

Supply Service Awards

The awards on unspecified quantities of soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D.C., went to the following companies: Schneider & Sons, Brooklyn, N. Y., with a bid of 6.47 cents a pound on item 51-S-1530; Swift & Co., Chicago, with a bid of 15.6 cents a pound on item 51-S-1885; and Stahl Soap Corp., Brooklyn, N. Y., with a bid of 26.9 cents on item 51-S-1915.

Laundry Bluing Bids

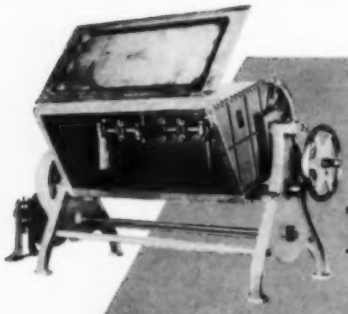
Low bids on an unspecified quantity of laundry bluing in a recent opening for miscellaneous supplies by the Navy Purchasing Office, New York, were submitted by the following: Chemical Textile Division of California Piece Dye Works, item 1, $1.65; item 2, $4.95; Brilco Laboratories, Brooklyn, item 1, $2.22, item 2, $7.19; Chloral Chemical Corp., Brooklyn, N. Y., item 1, $2.34, item 2, $7.03; and Fiber Chemical Corp., Cliffwood, N. J., item 1, $2.19, item 2, $6.89.

Raises Soap Output

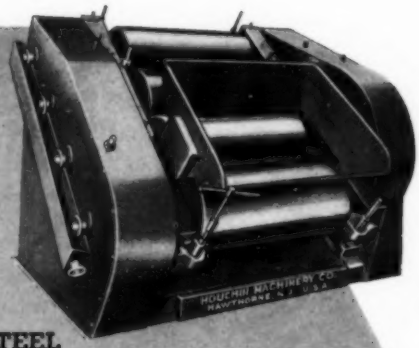
Soap production in Rhineland-Westphalia, Germany, rose to more than 44,000 tons last year, as compared with 26,500 tons in 1949, it was reported recently. The increase in production, carrying over into the first few months of 1951, is said to be due to increasing demand beginning with the outbreak of the Korean war.

6 MACHINES IMPORTANT IN—

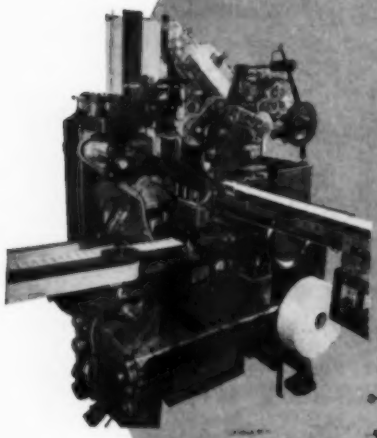
SOAP MAKING



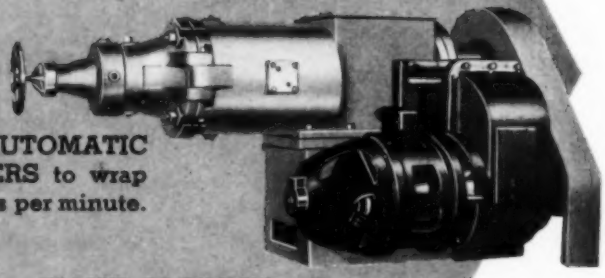
TILTING AMALGAMATOR
Other types available.



TYPE E STEEL ROLL MILL
With 18" x 40" water cooled rolls.

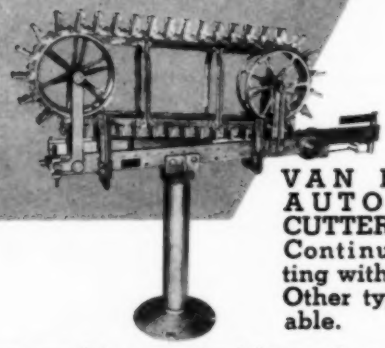


VAN BUREN AUTOMATIC SOAP WRAPPERS to wrap 200 to 300 cakes per minute.



GIANT PLODDER—Capacity 4000 to 6000 pounds per hour.

SAFETY AIR PRESS
Easier to operate. Produces consistently uniform cakes.



VAN BUREN AUTOMATIC CUTTER—
Continuous cutting without scrap. Other types available.

Houchin soap making machines include every machine required for modern soap manufacture. Available individually or in complete production ranges.

HOUCHIN MACHINERY CO., INC.

Sixth & Van Winkle Avenues **Hawthorne, New Jersey, U. S. A.**

Manufacturers of Soap Making Machinery for over Three-Quarters of a Century

PRODUCTION SECTION

Stove Polish Formulation

New applications for stove polishes, such as corrosion preventives in marine and airplane engines, are reviving interest in these items. Basic ingredients are graphite and carbon black.

ALTHOUGH cast iron stoves, boilers, etc., are no longer in extensive domestic use, stove and grate polishes are still manufactured in some volume. Some new applications, such as for corrosion prevention for application to marine and aeroplane engines, are reviving interest in such polishes. The properties of heat resistance, lubrication, and gloss play an important role in these relatively new uses.

The U. S. government specification for stove polish (P-P-576) calls for a product capable of producing a "deep, lustrous black color when applied as directed by the manufacturer. It shall produce no odor upon burning, and shall produce a durable coating that will not readily be burned off." It is also required that the product be non-inflammable, if liquid, have a consistency which is free flowing and if paste-type, be of such form that can be applied readily.

The basic ingredient of all stove polishes is graphite, often used together with lamp black, carbon and/or bone black. The blacks do not give as uniform or durable a film as graphite, but serve to improve the luster and produce a more intense black. Finely ground graphite is the preferred ingredient for stove polishes. It forms a somewhat opaque, grey to grey-black protective film. Lamp black is more grey than most carbon blacks, and has a blue tone. Carbon blacks are more readily wetted than the lamp blacks.

Nigrosine is sometimes added to stove polishes to color the vehicle black. Water is the most common vehicle, although organic solvents or wetting agents may be used also. The ultimate use of the polish, however, discourages use of inflammable organic solvents.

Sodium silicate, starch, or gums are sometimes incorporated in the polishes, to aid in the dispersion of the pigments in water. Waxes may also be added to improve the luster. When an emulsion is required, the emulsifying agent is formed *in situ* by reacting an alkali or an alkanolamine with fatty acids or rosin. It is suggested that the use of ferrous silicate in stove polishes serves to etch the iron surface slightly, resulting in better "take" of the polish.

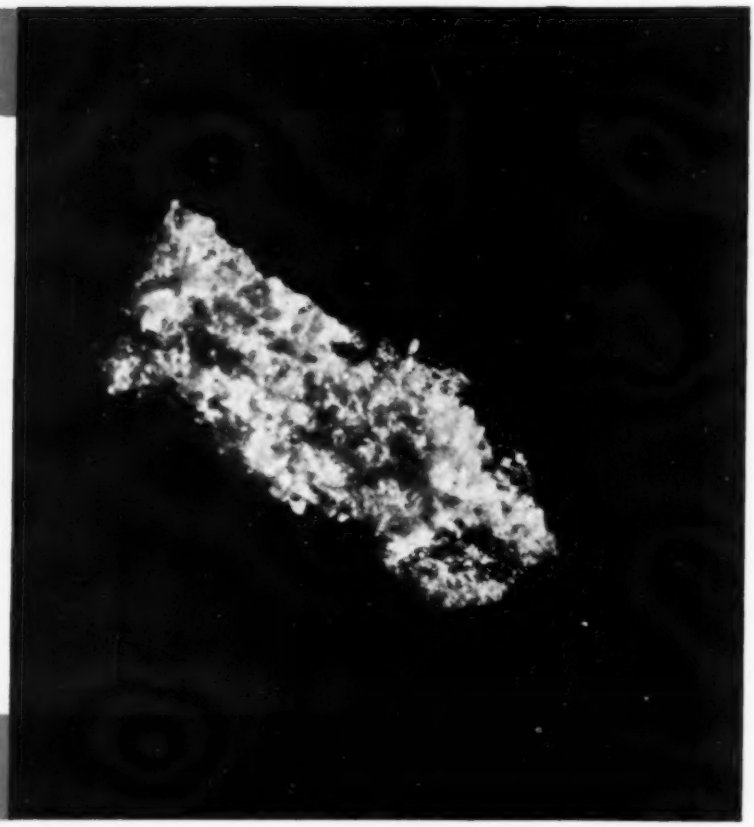
Liquid polishes are generally based on water or other aqueous solutions, although solvents or emulsions also are used. Additives for liquid products include waxes, soap, synthetic detergents, sodium silicate, shellac, gum, resins and nigrosine. The ratio of graphite and blacks to vehicle ranges between 1:9 to 1:3. The silicates are added to improve the suspending properties of the vehicle for the pigment, and it is pointed out that a preservative is required if gums or glue are incorporated in the polish. A basic formula for a liquid polish is given below:

	parts
graphite (finely ground)	18
carbon black, fine	3
carnauba wax, gray (or substitute)	2
japan wax	1
beeswax	2
water-soluble nigrosine	1
potassium carbonate	1
water, softened	72

The waxes are first melted in a steam jacketed kettle. In another container, the potassium carbonate and nigrosine are dissolved in 40 parts of boiling water. The aqueous solution is added slowly to the molten waxes. The pigments are added next, and finally, the balance of the boiling water is added. It is generally advisable to paste up the pigments with some of the solution, or water and a wetting agent, either by simple mixing or milling, before incorporating into the main batch of aqueous vehicle.

Except for the lower water content, there is little difference between the liquid and paste type products. Thickening and dispersing agents used in stove polish pastes include soap, synthetic detergents, sodium silicate, asphaltum, gums and resins. Hygroscopic agents such as glycerine, glycol, glycol ether and sorbitol frequently are incorporated in the paste products to prevent drying out. Binding agents include rosin soap and gum mucilage. Pine tar is sometimes added to the stove polishes to improve the odor and to improve the consistency as well as wearing properties. Following is a typical formula for paste stove polishes. A thinner version of this prod-

Magnification of an ULTRAWET K *flake.*



DETERGENT
DRYMIXING
PROBLEMS?

Look into
ULTRAWET K

Want to get more flexibility and lower costs in your cleaning formulations? Then we have a hunch you will be interested in 85% active ULTRAWET K.

This alkyl aryl sulfonate has only 15% sodium sulfate which allows you freedom to select your own combination of builders and extenders. Costs can be pared too because ULTRAWET K's 85% active flake means a real saving when compared to *less* active flakes. Another plus for this concentrated synthetic detergent — it can be stored in a smaller space.

We'll be glad to send you a bulletin showing the effects of mixing equipment — and the effects of builders — on the densities of the final product. Write The Atlantic Refining Company, Chemical Products Section, Dept. D-1, 260 S. Broad Street, Philadelphia 1, Pa.

Without obligation, please send me further information on ULTRAWET K.
DEPT. D-1

*Name*_____

*Company*_____

*Address*_____

ATLANTIC
PETROLEUM
CHEMICALS

SOME OF THE ATLANTIC PETROLEUM CHEMICALS ARE CURRENTLY IN SHORT SUPPLY

IN THE EAST AND MIDWEST
THE ATLANTIC REFINING COMPANY
Philadelphia • Pittsburgh • Providence • Charlotte • Chicago

ON THE WEST COAST
L. H. BUTCHER COMPANY
San Francisco • Los Angeles • Seattle • Salt Lake City • Portland

IN CANADA
NAUGATUCK CHEMICALS . . . Division of Dominion Rubber Co., Ltd.
Elmira • Montreal • Toronto • Windsor • Winnipeg • Saskatoon • Calgary

uct will serve equally well as a liquid stove polish:

	parts
olein	6
rosin, dark grade	3
graphite	15
carbon black	5
caustic potash (stick)	1½
water	53
sodium silicate solution	10
synthetic wax, high m.p.	1½
synthetic wax, medium m.p.	5

Besides the liquid and paste products, stove polishes are marketed to a limited extent as cakes or sticks, and as powders. Neither of these forms is very popular. The stick or block polishes may be molded from a base of black pigment, paraffin scale or other cheap waxy base, rosin or rosin soap, etc. The stove polishing powders consist merely of suitable mixtures of graphite and blacks; the "fatty" type of graphite is best suited for this purpose, while the most suitable black is finely divided carbon. *Soap, Perfumery and Cosmetics* 24, No. 4, 358-361 (1951).

"Cold" Refining of Fatty Acids

ONE of the main purposes of refining oils is the removal of free fatty acids, which are neutralized by means of caustics to form a soapstock, which is separated by means of its greater density. The refining processes may be divided into the following main steps: neutralization, washing, drying, bleaching, and deodorization. The last step is sometimes omitted, depending on the ultimate use of the oil.

The oil may be neutralized by the (1) cold neutralization process, (2) gravity settling process, or (3) short-mix process. In selecting the method of neutralization, the type of oil should be considered, the content of free fatty acids, as well as the volume of material handled.

The cold neutralization process is suitable for turning out 20 to 25 tons every 24 hours. It has lower losses of neutral oil and requires considerably less floor space than the gravity settling process. It is designed to process four charges of oil per day. Since the subsequent steps also operate on a six hour cycle, the refiner can take one charge of oil through all stages without dividing it or mixing it with other batches.

The crude oil is introduced into the neutralizer where it is treated with caustic, usually sodium hydroxide, at atmospheric temperature or just above its melting point. The two materials are agitated thoroughly, and when neutralization is complete, the mixture is passed through heat exchangers, etc., to a centrifuge, where the soapstock or "foots" are separated from the neutral oil. The soapstock is passed to a soap plant or to storage. The neutral oil is passed to the washing vessel where it is treated with brine and warm water to remove traces of soap dissolved in the oil.

The gravity settling process of neutralization is used particularly for coconut, palm kernel, and castor oils, which cannot be separated easily from their soapstock by centrifugal. These oils are neutralized at an elevated temperature and the resulting soapstock allowed to settle by gravity in the cone of the neutralizing unit.

A continuous method of neutralizing is that of the short-mix process which is recommended for cases in which the output is greater than 20 to 25 tons per day. Crude oil is passed to the degumming section, where emulsion bodies such as lecithin are formed and removed by centrifuging. The degummed oil is treated under pressure with sodium hydroxide at temperatures of 70° to 90° C. Saponification requires a minimum of time due to intimate mixing of the materials within a very brief contacting time. The soapstock so formed is separated by centrifuge and passed to storage. The neutral oil, still under pressure, is treated with hot water and passed through a washing column.

After washing, the oil is dried under an absolute pressure of two to three inches of mercury, the vacuum being produced by a two-stage steam ejector in conjunction with a barometric condenser. The oil is then bleached by reacting with bleaching earth and a small amount of activated carbon, drawn into the vessel by vacuum. The treated oil is pumped through a filter press, and passed to the deodorizing unit, if this operation is required.

Oils intended for edible purposes are deodorized by removing the odors and flavors, generally caused by volatiles, by steam distillation. The bleached oil is heated to the required temperature, depending on the type of oil being processed, and treated under vacuum with stripping steam blown into the vessel, until deodorization is complete. Vacuum of .25 inches of mercury, absolute, is maintained by means of a vacuum augmentor operating with a barometric condenser and two-stage steam ejector. *P-G Refining Plant* bulletin of the Power-Gas Corp. Ltd.

—— ♦ ——

Bleaching of Tallow

Liquid - liquid extraction with propane is used commercially in decolorizing tallow in a processing plant having a capacity of more than 200,000 pounds per day. The process has been found to be more effective than the chemical bleaching processes or those employing bleaching earths.

Propane and tallow are pumped at a ratio of 15 to 1 (by volume) into the fractionating tower, and the system subjected to previously determined conditions of heat and pressure. The bleached tallow-propane mixture is removed at the top of the tower and transferred to flash drums, strippers and other accessories, where the tallow and propane are separated. The process yields a 98 per cent recovery of the crude feed. Color bodies are removed at the bottom of the fractionating tower, passed through a flash drum, and stripper for the recovery of propane.

Crude tallow is heated to about 159°F. and enters the fractionating column at 475-480 psi. Feed conditions of the propane are 150°F. and 570 psig. Pressure in the fractionating column is controlled at about 465 psi. Continuous feed of propane and tallow is maintained to the column.

The useful temperature range for decolorization lies between 150-170°F. Tower temperatures are ex-

A FASTER FILL!
A CLEANER FILL!

—besides many other points of superiority!

Karl Kiefer
Revolutionary
ROTARY FILLER

PRESSURE + VACUUM

500 ***bottles a minute with ease !***

. . . a newly designed machine for filling liquids of a high or low viscosity. An ingenious balancing of pressure and vacuum assures a constant level fill. Use it as a full vacuum filler or a pressure filler, by just the turn of a valve. An outstanding development of 1951. Built in many sizes. Patents Pending.

Completely automatic, semi-automatic, hand-fed equipment to clean, fill, close, convey jars, bottles, tins, collapsible tubes.

Filters ● **Pumps**

The Karl Kiefer Machine Co.

CINCINNATI, U. S. A.

NEW YORK—BOSTON—CHICAGO—BALTIMORE—SAN FRANCISCO—SAVANNAH—LOS ANGELES—LONDON, ENGLAND

tremely important, particularly the temperature at the top of the tower. Variations of a few tenths of a degree will often change the color of overheads substantially.

Column pressure should be maintained constant, since it also exerts an effect on decolorization. An increase in pressure results in higher oil solubility, and therefore a higher temperature is required to precipitate the color bodies.

A better color is obtained with higher solvent ratios than with the lower ratios. With a change in solvent ratio, temperature conditions must be adjusted accordingly. Still another factor affecting decolorization is the composition of the oil. A high free fatty acids content requires a higher temperature since the fatty acids are more soluble in propane than the corresponding glycerides. A temperature of .4° is required for each increase of one per cent in free fatty acids. *Chem. Process.* 14, No. 2, 36-37, 41 ('51). (1951).

Determination of Anionics

Direct titration of the anionic agent with a solution of a cationic agent, using a two-phase system, provides a simple means of determining anionic surface active agents. The Epton method, which is based on stoichiometry of the reaction between the anionic and cationic agents, produces values which appear to depend on the size of the aliquot taken for analysis, the larger aliquots giving higher values.

A modification of the Epton method involves the calculation of a blank to be added to the observed titration, so that the results obtained indicate a mean error of only .85 per cent. The blank may be determined by direct titration of the reagents with the anionic solution followed by conversion to the equivalent volume of cationic solution. One feature of the analysis is that the data obtained are based on a primary standard (potassium dichromate) which is completely independent of the material under test, and which can be obtained in a highly purified condition. J.A.O.C.S. 28, No. 6, 233-235 ('51).

Folder on New Blender

A four-page folder describing the four and eight-quart "Twin-Shell" laboratory dry blenders is now available from Patterson-Kelley Co., East Stroudsburg, Pa. The new mixing principle is described and illustrated with a series of photographs of various stages of mixing. Features and special shells are explained and illustrated.

Petroleum Fact Book

Petroleum Facts and Figures. Ninth Edition. Published by American Petroleum Institute, New York. 492 pages, 6 x 9 inches, price $2.50.

A complete tabulation of petroleum data, covering production, sales, import, export, supply and demand, use by industry, drilling operations, wells, etc., are compiled and brought up to date in the ninth edition of this text. Eight major sections of the book cover: Utilization, Production, Refining, Transportation, Marketing Prices and Taxation, General (covering labor, safety, fire loss, finance, world and miscellaneous statistics), and American Petroleum Institute Organization. In addition to an index preceding each major section, a table of contents which lists the tables and page numbers is included also, as well as a classified cross reference index located at the back of the text.

New Rinsibility Test

The development of a method for testing the rinsibility of synthetic detergents was announced in a paper presented by Dr. W. A. Fessler of the nitrogen laboratory of Solvay Process Division, Allied Chemical & Dye Corp., New York. Dr. Fessler described his method in a paper before a recent meeting of the American Society for Testing Materials. In it he claims to offer a means for verifying by measurements the assumptions that synthetic detergents aid in the rinsing process. A feature of this method of analysis is that it will detect the presence of synthetic detergents when they are mixed with inorganic alkalies. Such alkalies include sodium carbonates, sodium phosphates, carboxy methyl cellulose, and other detergent aids.

Much of the research conducted to develop the technique dealt with the adsorption of synthetic detergents on such fabrics as cotton and wool, but the same test methods apply to other surfaces such as metals, plastics, ceramics, glass or painted surfaces. The method is described as one in which aqueous solutions of synthetic detergents can be titrated with surface active ions of opposite charge where the end point is marked by a sudden migration of a Bromphenol blue complex to a layer of chloroform in the test solution.

Full details of this testing method are contained in a report available upon request to Solvay Process Division, Allied Chemical & Dye Corp., 40 Rector Street, New York 6.

Floor Cleaner Evaluation

A method for comparing the efficiency of various detergents in floor cleaning, utilizes a test apparatus in which the test panels undergo controlled cleansing action. Light colored linoleum panels were used as the test surfaces, and were soiled with a standard soil similar to that described in the Federal Specification for Cleaner; for Painted Surfaces, Containing Synthetic Detergent, P-C-431.

A modified vegetable oil soap cleaner, prepared by saponification of blended coconut and corn oils by potassium hydroxide is used as the standard or reference detergent. The three cleaners tested were: (1) a mixture of equal parts of a non-ionic detergent and a polyphosphate; (2) liquid potash soap containing 1.8 per cent inorganic phosphate; and (3) an aqueous solution of an anionic synthetic detergent. The method was applied successfully to the critical evaluation of the detergents as floor cleaners, indicating that six ounces of product 1 and four ounces of a product 2 were equivalent in detergency to two ounces of the standard. Also, that an increase in concentration of cleaner 3 did not effect an increase in detergency.

It is suggested that the factory finish on the linoleum panels be removed before soiling, also that the panels be baked at one time, and be used the same day they are baked. *J.A.O.C.S.* 28, No. 6, 267-271 (1951).

A QUALITY PRODUCT
...for Making QUALITY SOAPS

SOLVAY
Trade Marks SOLVAY and Registered U.S. Pat. Off.

CAUSTIC POTASH

LOW IN IRON and other impurities

SOLVAY CAUSTIC POTASH

- 49-50% Liquid in Tank Cars
- 45% Liquid in Drums
- 90% Solid and Flake

SOLVAY Alkalies Chemicals 70 YEARS OF SERVICE 1881 1951

Soda Ash • Caustic Soda • Caustic Potash • Chlorine • Potassium Carbonate
Calcium Chloride • Sodium Bicarbonate • Specialty Cleansers • Sodium Nitrite
Monochlorobenzene • Para-dichlorobenzene • Ortho-dichlorobenzene • Methanol
Ammonium Bicarbonate • Ammonium Chloride • Formaldehdye • Nytron

SOLVAY SALES DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

BRANCH SALES OFFICES:
Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

New Type Filling Machine

MRM Co., Brooklyn, N. Y., recently redesigned their rotary filling machines to eliminate all mechanisms from the lower portion of the machine. This design is intended to eliminate the possibility of materials falling into machinery located under the filling level. In the future, all fully automatic machines, both the vacuum and gravity types, will be constructed with overhead mechanisms. Models will be available with 12 to 40 spouts with production capacities up to 400 containers per minute.

Pennsalt H_2O_2 Booklet

Pennsylvania Salt Manufacturing Co., Philadelphia, recently announced a new booklet on hydrogen peroxide for workers who need a reference book of a general nature. Written in non-technical language for plant foremen, workers and those considering using the product for the first time, the booklet contains recommendations on handling, use, shipping and storage of hydrogen peroxide. A brief explanation of terminology used in connection with the product is given.

Booklet on "G-11"

Sindar Corp., New York recently issued a bibliography on "G-11" brand of hexachlorophene. This bibliography, "Technical Bulletin H-1," contains abstracts and references of about 51 scientific and non-technical articles and abstracts of 19 patents. The bibliography is indexed so that abstracts can be located on general information concerning the uses of "G-11" in soaps, synthetic detergents and other materials.

Floor Coating Booklet

A brochure covering the characteristics, properties, uses and methods of application of synthetic rubber resin based coatings for floor finishes and other surfaces was issued recently by Casey & Case Coating Co., Maywood, Calif. Copies of the bulletin are available from the firm at Box 151, Maywood. In the section dealing with floor coatings it is pointed out that the feature of the copolymer resin floor finishes is their resistance to alkalies. They provide a coating which prevents integration between alkaline concrete and the alkaline bases of most commonly used floor cleaning compounds. Good chemical resistance is offered by these synthetic rubber based floor coatings, which are said also to be unaffected by exposure to vegetable and mineral oils, and greases. Methods of applying the floor coatings, time of drying, coverage, etc. are also mentioned in the booklet.

New Mixing Device

Premier Mill Corp., Geneva, N. Y. recently announced a new mixing device known as the "Simplex Dispersator." Designed for use where propellors are inefficient, the machine consists of a cylinder rotating at high speed which forces the mixture outward through narrow slots in the cylinder under considerable pressure. The action causes shearing of the material and results in complete mixing, according to the company.

New Books on Talc

Whittaker, Clark & Daniels, Inc., New York, announced recently that it is now back in full production after the recent fire, which destroyed their sample room and stocks of talc and metallic soap catalogs at their South Kearney, N. J. plant. The sample room has been replaced and a new run of the catalogs has made it possible to fill all requests received before the fire. New requests are being handled as promptly as received.

P&S Article Reprints

Polak & Schwarz, Holland, have issued recently three reprints in booklet form of a discussion of "A New Synthesis of Aryl-Aliphatic Alcohols." The first concerns the preparation of 3-phenyl-propanol-1 and 3-phenyl-butanol-1 and is written by M. G. J. Beets. The second covers cyclamen alcohol and cyclamen aldehyde and was written by Mr. Beets and H. Van Essen. The third relates to application of the method to some natural and synthetic compounds and was written by Mr. Beets and E. A. Drukker.

Protovac Properties Charted

Borden Company, New York, has recently issued a folder on its "Protovac" caseins, technical grades of which are used as emulsifiers or coatings. A chart is included in the folder summarizing properties of "Protovac" in floor waxes, shoe polishes, etc.

New Lowell Catalog

Lowell Manufacturing Co., Chicago, recently issued a new catalog covering its line of sprayers and dusters. The catalog, number 55, is illustrated and a current price list of all the items is enclosed separately. Illustrated are compression sprayers, knapsack sprayers, hand sprayers, bucket and barrel pumps, slide type sprayers, power sprayers, dusters, etc.

New Blind Washer

Venetian Blind Laundry Equipment Co., Wichita, Kans., recently announced a pamphlet describing their new "Tornado" venetian blind washing machine. The machine is a cabinet type washing machine on rollers. It has a 28 gallon tank and a ¼ h.p. electric motor. Water is supplied by a garden hose attached to a regular faucet.

Cyanoacetamide Bulletin

Compilation of a technical data bulletin on cyanoacetamide was announced recently by Kay-Fries Chemicals, Inc., New York. The bulletin contains information on the properties, specifications, suggested applications and a synopsis of work reported in the literature. Cyanoacetamide is regarded as an important intermediate.

New Water Demineralizer

Enley Products, Inc., New York, announced recently that it has developed an inexpensive unit for demineralizing water. Attached to the regular water tap, the unit allows the water to pass through a replaceable plastic cartridge. The cartridge is good for approximately 120 gallons of water and changes color from blue to yellow as it is used. "Fiberglas" filters help trap physical impurities.

They discovered

Away back, when soap was made from a crude mixture of ashes, household waste fats and water, the problem was to know when the ash and water mixture was ready for saponification with the fats. They discovered that when an egg, dropped in the solution, *floated*, the time was right for blending.

have YOU discovered

that Tall Oil is being "discovered" by more and more soap manufacturers, because it simplifies processing and is definitely lower in cost?

UNION'S REFINED TALL OIL

UNITOL

is . . . Good in Color
Uniform
Constant in Supply
Lower in Cost

Manufacturers *depend on Union* for steady, continuous flow of Unitol! Write for further information to Chemical Sales Dept. of Union.

unitol
THE REFINED TALL OIL

UNION BAG & PAPER CORPORATION

WOOLWORTH BUILDING, NEW YORK 7, N. Y.

Consider NOW!

BOWEN DETERGENT SPRAY DRYERS

1. *Proven by over 10 years operation in the detergent field.*
2. *High bulk density product obtainable from heavy feed formulations.*
3. *Atomization by Bowen patented centrifugal atomizer or by nozzle.*
4. *Chamber separation of product.*
5. *Complete dryer plant design and equipment.*

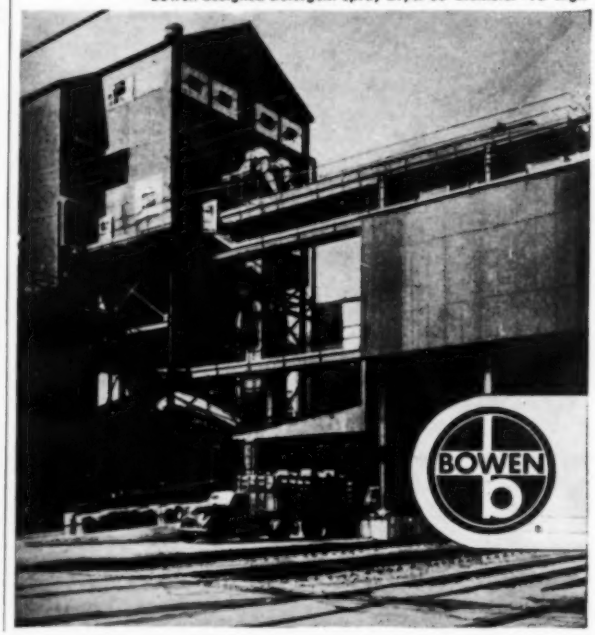
Bowen engineers will be glad to furnish specific information on your particular problem.

BOWEN ENGINEERING, INC.

10 STATION RD. • NORTH BRANCH, N. J.

Recognized Leader in Spray Dryer Engineering Since 1926

Bowen designed Detergent Spray Dryer 30' diameter—75' high



PRODUCTION CLINIC

By E. G. THOMSSEN, Ph.D.

CONTINUING last month's article on hand protective creams this month, we are going to consider the raw materials entering into the composition of such preparations. We have noted that occupational dermatitis is caused by numerous irritants. The prime purpose of skin protective creams is not to beautify the skin, but to prevent harmful substances from contacting it. At the same time, care must be exercised not to produce any discomfort or irritation through the use of such skin protectives. Since skin irritants are quite numerous, one naturally expects protection against an individual irritant. It has not been possible thus far to devise one cream to protect against all causes of skin irritation.

Authorities on protective creams suggest such products fall into four groups. Briefly, they are fatty and oily substances, jelly-like lotions, emulsions and soap bases.

The first group consists of fats and oils, lanolin, petrolatum, mineral oil, soft waxes and similar substances. This is the oldest type of skin protective. Workmen, such as machinists and steam fitters, whose hands become heavily soiled by their work have, for years, rubbed grease into the hands and around the fingernails to enable more ready cleaning at the end of the day. The difficulties with this group of protectives is that they stain any article contacted and require for their removal strong detergents, which may in turn induce dermatitis.

The second, or jelly, group is made mostly from colloidal ingredients such as starch, gum Tragacanth, gum Karaya, agar agar, glycerine, glycols and honey. They are not thought to exert any physical or chemical action on the skin other than acting as a barrier toward skin irritants. Usually they are highly absorptive.

The third group is most efficient of the skin protectives. The beneficial properties of emulsions, in this regard, depend upon their composition. They can be applied more easily and evenly to the skin than the others. Their removal may at times require a rather

DR. THOMSSEN

harsh cleansing action due to the fatty barrier that is built up by their use. Emulsions may be said to be a combination of the ingredients listed in groups one and two. Since emulsions are apt to break, solidify and deteriorate in other directions, it is important that care be given to produce a stable preparation.

Soap bases, like the alkaline salts of stearates, oleates and palmitates, form the last group. Amine soaps may be included too. To be effective these protectives should be superfatted, as much criticism has been made of them due to their irritating effect on the skin when free alkali is present. They wash off the skin readily because of their high degree of solubility in water.

The most suitable skin protective must possess certain desirable characteristics and properties. Some authorities have suggested specific standards. It is to be questioned whether such specifications could better the concise and inclusive description given by Mumford who has carried out wide investigations in this field. He says of a protective skin cream:

"It must (a) be easily spread; (b) remain stable in the presence of most other chemical agents; (c) provide an oil film of low surface tension; (d) be not hygroscopic (dehydrating); (e) be non-transferable; (f) be without capacity to 'cut' — that is, break up and allow penetration of chemicals through itself; (g) be able to prevent heat insulating effects by providing low surface tension and a capacity to mix with water; (h) if possible, to some slight extent be absorbed into the skin, and certainly must fill the hair follicles with an inert but easily removed substance; (i) should be easy to remove without the use of scrubbing-brushes or a detergent other than good soap."

From these qualities listed above, it is quite evident that the preparation of efficient skin protectives bristles with difficulties. Skin protectives continue to find a definite place in preventive, industrial medicine. Sanitary chemical suppliers should not lose sight of their application in many industrial fields which they serve already. The U. S. Public Health Service endorses their use in certain industries that have a large potential market.

Creams have outdistanced other preparations in this field. Formulations for these may be found largely in books on cosmetics and in trade papers. The influx of women into industrial plants, especially during shortages of male labor, increases their consumption. Women apply them not only to the hands but to the face and arms during working hours. The male laborer at first considered the use of skin protectives effeminate, but is known to have tried them when it was discovered that his co-worker continued in her job untroubled while the imbedded grime often produced occupational dermatitis in the non-user.

The composition and formulation of skin protectives depends largely upon the barrier compounds used. As we have stated already, emulsions, preferably water-in-oil types, are the most desirable form to use because they may be applied more smoothly and uniformly, thus providing a near-

how to improve your formula...

...ADD *Versene**

VERSENE* IS STABLE

Versene is stable throughout the pH range in either hot or cold alkaline solutions. As a powerful organic chelating (complexing) agent, it gives you exacting chemical control over cations in solution. If properly used it does not affect the pH of finished soaps. When included in your formula it can improve your process, better your product and cut both cost and spoilage.

VERSENE* IS VITAL

Because Versene, through the new chemistry of chelation, does so much so well, it is vital to soap production. Here are some of the things it can do for you:

- **Completely soften saponification water *without* precipitation.**
- **Eliminate need for distilled water.**
- **Prevent insoluble soap formation.**
- **Eliminate chilling process.**
- **Speed filtration of unsaponifiables.**
- **Prevent oxidation, rancidity, discoloration.**
- **Increase shelf life, inhibit precipitation.**
- **Improve detergency, increase lather.**
- **Insure clarity even in hard water.**
- **Prevent formation of soap film.**
- **Give "built-in" hard water resistance.**
- **Prevent chalking and rancidity.**
- **Solubilize proteins, saponify fats and oils.**
- **Give "natural" soaps same advantage as synthetics.**

VERSENE* IS VALUABLE

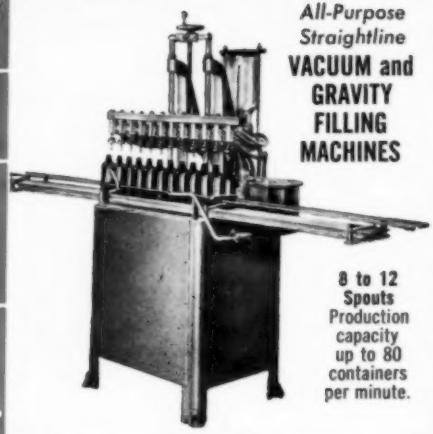
When you want to improve your formula and give old products new qualities — get the facts on the Versenes. Chemically, they are known as the sodium salts of ethylene diamine tetra acetic acid and other polyamino acids. They are available in liquid or powdered form by the drum or carload. Write today for Technical Bulletin No. 2. Address Dept. C. Ask for samples.

NEW VERSENE WATER TEST KIT. Tells total hardness in 2 minutes. Accurate to one grain per gallon. Versenate Method. Complete Kit $5 postpaid.

"INDUSTRY'S MOST MODERN CHEMICALS" *Trade Mark

BERSWORTH CHEMICAL CO.
FRAMINGHAM, MASSACHUSETTS
Warehouse Stocks
Providence Agent:
George Mann, 251 Fox Point Boulevard, Providence, R.I.
W. Coast Agent: Griffin Chemical Co., San Francisco, Los Angeles
Midwest Agent: Kraft Chemical Co., Inc., 917 W. 18th Street, Chicago
Wasatch Chemical Co., Salt Lake City, Utah
Barada & Page, Inc., Dallas and Houston, Texas
Associated Chemical Co. of Canada, 14 Darrell Ave., Toronto, Ontario

"Simplicity" is the word for
mrm FILLERS
• economical • efficient



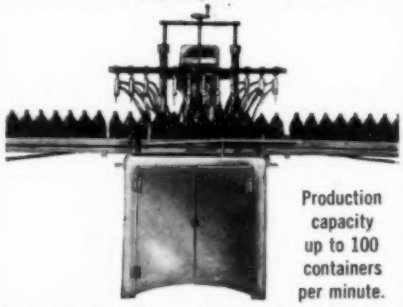
All-Purpose Straightline
VACUUM and GRAVITY FILLING MACHINES

8 to 12 Spouts Production capacity up to 80 containers per minute.

Fills thin to viscous liquids (shampoos, syrup, mustard, etc.). Fully adjustable to handle containers ranging from fractional ounce to one gallon — all shapes and mouth diameters (glass, tin or plastic), including sprinkler tops, open top cans and jars.

A model for every need— from 10 to 400 containers per minute

12 Spout Semi-Automatic
VACUUM and GRAVITY FILLING MACHINES



Production capacity up to 100 containers per minute.

Ideally suited for filling thin and viscous liquids as well as shampoos, in containers ranging from 1 ounce to 1 gallon in glass, and up to quarts in metal — all shapes and mouth diameters. Fully adjustable from one size container to another. Supplied with 10 foot automatic intake and discharge conveyor with variable speed drive control.

Write Dept. SSC for literature on complete MRM line.

mrm company, inc.
191 Berry Street, Brooklyn 11, N. Y.
Manufacturers of a complete line of fully automatic and semi-automatic filling equipment and fully automatic labeling machines.

ly invisible film on the skin. In building such emulsions, plenty of barrier substance such as petrolatum, waxes, etc., with a minimum amount of water are desirable. In addition to the liquid forms powdered barriers also are of importance. Talc is used widely in powder products as it forms an adherent layer on the skin that is not easily wet by water. Such a layer, supplementing the emulsion ingredients, acts effectively in barring the action of oil or water soluble irritants on the skin. Any powder barrier used must be cheap, inert, non-absorbent, adherent and flaky in structure to permit a uniform impermeable layer. Zinc oxide and titanium dioxide are often employed. In addition to these and talc, certain metallic stearates are of value in forming a suitable barrier. Usually 15 to 20 per cent of powder gives effective protection.

Vanishing cream type protectives are not very effective as they are readily attacked by moisture. Their largest application is in manufacturing operations in which it is desirable to keep the hands greaseless. Here again the addition of barrier powders is found to be of value in increasing protective qualities.

Where employees are exposed to operations in which they are apt to suffer burns from strong light, it is customary to resort to suntan creams and powders. The protective chemicals used in such products include the quinine sulfates, menthyl salicylate, menthyl anthranilate, and quinine oleate, as well as powder barriers to screen out the burn-producing light rays. Preparations used for this type of protection come as oils, creams or straight alcoholic solutions.

The field of skin protectives has not been given ample attention by sanitary chemical manufacturers. During the present emergency, particularly with more women taking jobs in industry, the field for development is once again more attractive than during normal times.

With Our Advertisers

ANY one reading the advertising pages of *SOAP* carefully must be impressed by the large variety of merchandise that is offered in them. They simulate to some degree a general catalog of the chemical industry. Any production man who does not study the advertising pages of trade magazines thoroughly is not deriving the full benefit of them. In a recent issue of this magazine, we were interested particularly in certain of the advertisements. Among them were Bowen Engineering Co. of North Branch, N. J., which for 25 years has had experience in spray dryer engineering. Bowen featured the advantages of its units for spray drying detergents.

Union Bag and Paper Co., New York 7, call attention to the use of 'Unitol," their refined tall oil. This product, which is of good color, uniform, ample of supply, and economical, is being used by more and more manufacturers of soap and other sanitary chemical supplies.

Calmar Co., Los Angeles, illustrates its line of increased sales-producing sprayers for smaller sized bottled liquids closed with 18 mm. to 33 mm. and larger metal or molded caps. Such sprayers build larger sales for spray type products.

Petrolite Corp., New York 4, tells about the uses of its microcrystalline and emulsifiable waxes. Specifications are given for the various waxes offered by the company.

Sterwin Chemicals, Inc., New York, briefly, yet completely, tell the story of the uses of quaternary ammonium germicides as illustrated by their well known product, "Roccal," which is now offered to manufacturers in a 50 per cent concentration for formulation into various sanitizing agents.

Durez Plastics & Chemicals Inc., N. Tonawanda, N. Y., describe the interesting details of the use of "Durez" resins in liquid waxes. They offer the services of their customer service laboratory to prospective users of their products and will send a copy of their technical bulletin upon request.

Mops for jobbers are featured by American Standard Manufacturing Co., Chicago. Wet and dry mops as well as applicators for wax, seals and varnishes to floors have had enthusiastic approval from thousands of maintenance managers who use their mops.

Laboratory men, working with detergents, will be interested in the "Terg-O-Tometer" of U. S. Testing Co., Hoboken, N. J. This device simulates home washers, evaluates detergency, fastness of colors to laundering and redeposition of soil. Literature and prices are available.

A mechanism that vaporizes an insecticide, harmless to humans, yet a potent killer of flies, is offered to jobbers by Utica Sanitary Specialties, Inc., Whitesboro, N. Y. The mechanism named "Electrofly" is designed for use in restaurants, dairies, stores, bakeries and similar establishments as it may be used safely around foodstuffs.

For those interested in various types of rebuilt machinery and equipment, Union Standard Equipment Co., New York 12, N. Y., list some of their bargains in this field. It is often advantageous to purchase rebuilt equipment and this company is a potential supplier.

These are but a few of the diversified products described in the advertising in *SOAP*. Surely these pages deserve careful perusal every month by alert production men who wish to keep up to date.

—— ♦ ——

Nacconol for Dyed Fabrics

Naphthol colors that are most susceptible to crocking may be washed satisfactorily with a solution containing .2 per cent "Nacconol NR" plus .4 per cent or more of sodium sulfate or sodium chloride. Naphthol prints are sometimes washed more satisfactorily with a solution containing .2 to .3 per cent "Nacconol NR" plus .1 to .2 per cent tetrasodium pyrophosphate or soda ash. Generally, vat color shades are developed best in a boiling soap solution. The same effect cannot be entirely duplicated with alkaline "Nacconol NR" solution. However, since only a small amount of soap is required actually to develop the shade, some mills have replaced part of the soap normally used for this operation with "Nacconol NR" to serve in removing loose color and rinsing it away. *Dyestuffs*, house organ of National Aniline Div., Allied Chemical & Dye Corp., New York, 40, No. 5, 87 (1951).

CORN COB MEAL
for BETTER HAND SOAPS

For Powdered-Cake-Paste Soap Use
Corn Cob Meal

If you want to modernize and improve your hand soap formula, consider "COCOB'S" many advantages *now*.

- **Priced lower than corn meal**
- **Free from metallic particles**
- **Replaces other abrasives entirely**
- **Highly absorbent (improves flowability) and dry**
- **Uniform**
- **Readily available**
- **Packed in paper bags**
- **Will not discolor soaps**
- **Gives desired cleansing action but will not scratch or cut the skin.**
- **Available in a variety of sizes (No. 10, No. 20, No. 40 and No. 60 mesh)**

Send today for samples, literature and prices.

"COCOB" brand has many other uses as an abrasive cleaner and as a grease absorbent, etc.

MEMBER: Corn Cob Processors of America

AGRI-INDUS MFG., CO.

1327 HUNTINGTON BANK BLDG., COLUMBUS 15, OHIO

PLANTS: Camden, Ohio • Wadsworth, Ohio • New Washington, Ohio

Please write to main office in Columbus, Ohio

- Amyl Cinnamic Aldehyde
- Benzyl Acetate
- Benzyl Alcohol
- Benzyl Benzoate
- Benzophenone
- Diethyl Phthalate
- Dimethyl Phthalate
- Methyl Acetophenone
- Nerolin
- Phenylacetic Acid
- Ethyl Phenylacetate
- Methyl Phenylacetate
- Phenyl Ethyl Acetate
- Phenyl Ethyl Alcohol
- Yara Yara

for uniform high quality

KAY-FRIES AROMATICS...

benzyl alcohol

KAY FRIES CHEMICALS INC.

Plant—West Haverstraw, N. Y.

Write or Phone for

PRICES and TECHNICAL INFORMATION

American-British Chemical Supplies, Inc.
Selling Agents For
KAY-FRIES CHEMICALS, INC.
180 Madison Avenue, New York 16 • MUrray Hill 6-0661
CABLE ADDRESS: BISULPHIDE, NEW YORK

PRODUCTS AND PROCESSES

Non-Foaming Shave Cream

These are generally products incorporating wetting agents, and other anion-active and also cation-active substances, and using organic bases such as triethanolamine. One such product is as follows:

	Parts
stearine	20
protegin	8
olive oil	3.2
triethanolamine	1.7
glycol	1.9
softened water	71

Alchimist 5, No. 5, 129 (1951).

Polyoxyethylene Detergents

Non-ionic detergents such as "Triton X-100" and "Glim," which contain an ethylene oxide chain as the hydrophilic group are precipitated by silico tungstic and phosphomolybdic acid. This allows the use of a gravimetric method for the determination of polyoxyethylene detergents. Phosphomolybdic acids may be used as the precipitating agent, and the precipitate dried to constant weight. The determination is applicable only in cases where the identity of the detergent is known. *Schimmel Briefs* No. 193, April (1951).

Soap as Cream Base

The specifications for cosmetic creams require that the base be hydrophyllic, non-irritant, and stable to light and air. Satisfactory results are obtained with a base containing technical cetyl alcohol combined with soaps and Turkey red oils. These mixtures are homogeneous and easily emulsifiable. Best results are obtained by using a homogenizer in addition to an emulsifying machine. The homogenizer serves to stabilize the emulsion, protecting it from separation, and further disperse the already dispersed phase. In perfuming emulsions, it is suggested that the proportion of aromatics used not exceed .5 per cent (if the raw materials used are pure and without specific odor), since many aromatics may spoil the emulsion. *Alchimist* 5, No. 6, 155-161 (1951).

Transparent Toothpaste

A gelatin formed by treating hemicellulose with soaking and solubilizing materials such as glycerol, diethyleneglycol and water, is warmed with solutions of carbohydrates and sulfonated fatty acids to give a clear, transparent toothpaste. Swiss Pat. 267,-524 through *Chem. Abstracts.*

Shaving Soap Additives

The use of lithium soap is claimed to render shaving easier, according to one British authority. The lithium carbonate is used alone or in combination with strontium oxide in the formulation. A Yugoslavian patent claims disinfectant action by incorporating aqueous or alcoholic garlic or onion extracts in shaving preparations. A German patent for the manufacture of a shaving cream beneficient to the skin incorporates water unguents containing cultures of fermentation fungi, characterized by the fact that to the unguents substances such as calcium carbonate, magnesium carbonate, calcium oxide are added, which have the property of preparing the hair for shaving by emollifying it. This last patent also includes swelling substances such as cellulose methylether. *Alchimist* 5, No. 6, 152-155 (1951).

Fatty Alcohol Separation

Fatty alcohols of high molecular weight may be separated from the soap formed in the process of their preparation, by dissolving the alcohols in a water-insoluble solvent, and washing with water. Continuous countercurrent flow of water against the alcohol-solvent-soap mixture results in a soap-water solution at one end of the process, and a solvent-alcohol solution at the other. Brit. Pat. 650,326, through *Soap, Perfumery and Cosmetics.* 24, No. 5, 456 (1951).

Soaps as Dispersants

The solubilization of perfumery oils is normally carried out by using a four component system: oil, water, emulsifying or dispersing agents, and an auxiliary solvent. Among the dispersing agents are potash soaps and synthetic detergents such as sulfonated castor oil, triethanolamine lauryl sulfate, sodium lauryl sulfate, etc. The following four soaps and soap-like substances were found to be the most useful of a large number tested for the purpose of dispersing the oils: (1) potassium oleate as a saturated aqueous solution, i.e., 20 per cent; (2) potassium ricinoleate as a saturated aqueous solution (33 per cent); (3) triethanolamine "linoleate," containing free triethanolamine; and (4) ammonium ricinoleo-sulfate.

In the preparation of the aqueous perfume bases, which can be diluted with water to any extent without losing their transparency, it is important to have measuring units, and stirrer perfectly dry. The oil is then mixed thoroughly with the soap solution of given strength. The perfume may contain a swelling agent, such as brine or ammonia, which should be added before the product is made up to volume with soap. The function of the swelling agent is to make the soap more colloidal, and make the conditions more favorable to solution. *Alchimist* 5, No. 5, 124-128 (1951).

New Phosphorus Furnace

The construction of a fourth electric furnace unit for the manufacture of elemental phosphorus at its Pocatello, Idaho, plant was announced recently by Westvaco Chemical Division of Food Machinery and Chemical Corp., New York. Two furnaces are presently in operation at Pocatello, and a third will be operating shortly. The company also announced its plans to expand its facilities for processing phosphorus into grades of phosphates at existing plants. Completion of the new, fourth furnace and additional phosphate producing facilities is contemplated by mid-year of 1952.

WATERLESS HAND CLEANER MANUFACTURERS:

Why cripple sales appeal with undesirable odors of ammonia and mineral terps? ODORMASQUE N gives your products a sales lift because it is pleasant smelling... completely neutralizes unpleasant odors.

Manufactured by
ALBERT ALBEK, INC.
3573 Hayden Avenue
Culver City, Calif.

NUNCA VARIA
ALBEK

Albert Albek, Inc.
3573 Hayden Ave.
Culver City, California

Please send a free sample and more information about Odormasque N.

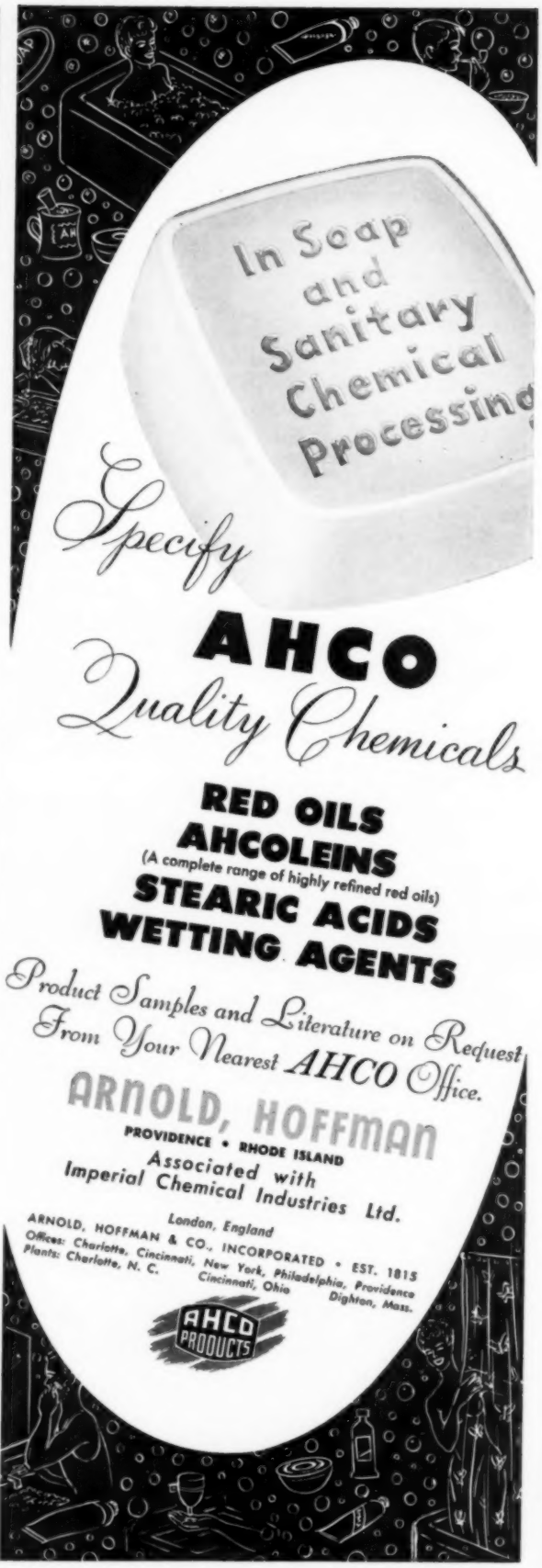
NAME .....

COMPANY .....

ADDRESS .....

CITY .....

ZONE .....STATE .....



NEW PATENTS

The information below is furnished by patent law offices of

LANCASTER, ALLWINE & ROMMEL

402 Bowen Building
Washington 5, D. C.

The data listed below is only a brief review of recently issued pertinent patents obtained by various U. S. Patent Office registered attorneys for manufacturers and/or inventors. Complete copies may be obtained direct from Lancaster, Allwine & Rommel by sending 50c for each copy desired. $1.00 for Canada. They will be pleased to give you free preliminary patent advice.

No. 2,550,207. Dentrifrice Compositions, patented by Maurice L. Tainter, Albany, and Emil T. Hinkel, Jr., Slingerlands, N. Y., assignors to Sterling Drug Inc., Wilmington, Del., a corporation of Delaware. The patent covers a dentifrice comprising microcrystalline aluminum hydroxide having a particle size substantially in the range of 0.025 to 0.5 microns, a dentifrice vehicle and a detergent.

No. 2,547,208. Method for the Refining of Tall Oil Soap, patented by Torsten Hasselstrom and Michael Stoll, New York, N. Y., assignors to U. S. Industrial Chemicals, Inc., Newark, N. J., a corporation of Delaware. The method of refining an aqueous solution of a tall oil soap is patented, comprising 25% to 70% water and also containing undesirable non-saponifiables and color bodies, which method comprises dissolving said aqueous solution to form a single phase in a dialkyl ketone which is liquid at ordinary temperatures and which, at ordinary temperatures, is soluble in water to the extent of about 0.2% to about 10% by weight and thereafter separating the ketone solution into a ketone layer containing the major portion of the non saponifiables and color bodies and an aqueous layer containing the major portion of the tall oil soap by adding further water to the said ketone solution.

No. 2,544,093. Deodorant Compositions, patented by Lowell B Kilgore, Washington, D. C., assignor to Kilgore Chemicals, Inc., Washington, D. C., a corporation of Delaware. The patent describes a deodorant composition comprising a solution of an ester having the general formula:

$$CH_2=C(R)—COOR'$$

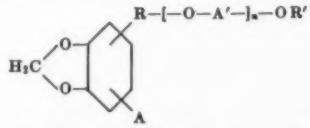
wherein R is a radical selected from the group consisting of hydrogen and an alkyl radical of low molecular weight and R_1 is an alkyl containing at least 8 carbon atoms, dissolved in an inert, non-polar organic solvent, said solution being incorporated into a miscible, non-gaseous propellent agent which is maintained in said non-gaseous state at normal temperatures by the application of pressure.

No. 2,551,634. Liquid Soap Composition, patented by Robert Hamilton Price, Shelton, Wash. The patent covers a non-superfatted liquid soap composition soluble in water to produce optically clear substantially neutral solutions having marked detergent properties, said composition comprising (1) a mixed soap comprising **(a)** the reaction product of oleic acid and a base selected from the group consisting of the lower alkanolamines, the lower amines, and ammonia, and **(b)** a substantial proportion of the reaction product of oleic acid and a base selected from the group consisting of solium hydroxide and potassium hydroxide, said soap consisting of substantially theoretical equivalents of oleic acid and total base, (2) at least 1.5 moles of isopropanol per mole of oleic acid, and (3) at least 0.9 mole per mole of oleic acid of a glycol ether modifying agent.

No. 2,555,285. Detergent Composition, patented by Eldridge J. Black, Levittown, N. Y., assignor to General Aniline & Film Corporation, New York, N. Y., a corporation of Delaware. The patent describes a solid dry detergent composition from which there is no liquid separation on storage, consisting essentially of from 1 to 10 parts by weight of an inorganic alkali detergent salt, 1 part by weight of a normally liquid water soluble non-ionic surface active agent which contains a polyoxyalkylene ether chain having at least 3 alkenoxy groups, and 0.2 to about 0.5 parts by weight of an alkali metal salt of a formaldehyde-alkylnaphthalene sulfonic acid condensation product.

No. 2,554,358. Composition For Cleaning Metals, patented by John P. Burke, Chicago, Ill., assignor to Birco Chemical Corporation, Chicago, Ill., a corporation of Illinois. The patent covers a cleaning material for removing oxides, scale and other foreign material from metal surfaces formed by adding, with stirring, approximately 30 parts by volume of 10 per cent aqueous solution of sodium silicate to a mixture consisting essentially of an aqueous solution of approximately 60 parts by volume of hydrochloric acid (specific gravity 1.19), approximately 5 parts by volume of phosphoric acid (aqueous solution, 75 per cent strength by weight, approximately 5 parts by volume of copper sulfate (aqueous solution, 25 per cent by weight), and approximately 1 per cent by volume of glycerine.

No. 2,550,737. Insecticidal Composition Containing Pyrethrins And a Synergist Therefor, patented by Herman Wachs, Brooklyn, N. Y., assignor to U. S. Industrial Chemicals, Inc., New York, N. Y., a corporation of Delaware. The patent describes an insecticidal composition comprising pyrethrins and as a synergist therefor a compound of the generic formula



in which R is a saturated, bivalent, aliphatic, hydrocarbon radical, A is a substituent selected from the group consisting of the hydrogen atom and alkyl radicals, R′ is a substituent selected from the group consisting of alkyl, cycloalkyl, aralkyl, aryl and heterocyclic radicals, A′ is a saturated, bivalent, aliphatic, hydrocarbon radical having from two to three carbon atoms and **n** is an integer from one to three.

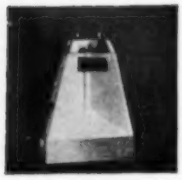
No. 2,552,235. Insecticidal Compositions, patented by Friar M. Thompson, Jr., Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware. An insecticidal composition is covered comprising 1,1,1-trichloro-2,2-bis(p-chlorophenyl) ethane and a terpene thiocyanoacylate which are present in the composition in the ratio of at least 1 to 9.

No. 2,555,098. Continuous Bleaching Process, patented by Judson H. Sanders, Wyoming, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio. The patent covers the improvement in the continuous process of bleaching caustic refined, water washed, and centrifuged glyceride oil which comprises effectively contacting the washed and centrifuged oil, containing residual dissolved and entrained moisture, with bleaching clay for at least one minute to cause the absorption of coloring matter from the oil by the clay, delaying the removal of the moisture contained in the oil-clay mixture until effective color absorption has occurred, and then removing said moisture by vacuum drying and said clay by filtration from said oil.

FOUR U. S. MACHINES FOR CLEANING CONTAINERS

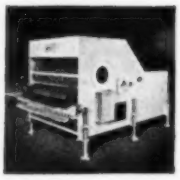
For Automatic Cleaning by Compressed Air

The "U. S. Sanitair" offers exclusive cleaning and bottle handling innovations that command consideration wherever automatic air cleaning of containers requires speed. Write for new Bulletin.



Semi-Automatic Cleaning by Compressed Air

As a two-tube machine the "E-Z Air Cleaner" is unbeatable. Requires no skill for fast operation. Furnished with compressor or air filter ready for connection to your air line. Write for Bulletin.



Automatic Bottle Handling

A—An Automatic Unscrambler
B—An Automatic Washer

The "Load-A-Matic" will unscramble, wash, rinse and drain automatically as high as 26,000 bottles an hour. Thorough cleaning, using a minimum amount of water. Write for "Load-A-Matic" Bulletin.

Bottle Rinsing & Cleaning

The "U. S. Rotary Rinser" is adjustable to any size bottle, jar or jug from ounce to including gallons. Washes inside and out on one turn. For hot or cold water or steam. Washing is automatic.

Another unit is made for preparing and cleaning ampules and small serum bottles. Write for details.

U. S. BOTTLERS' MACHINERY CO.
4019 N. Rockwell St. Chicago 18, Ill.

OFFICES: Boston—Dallas—Houston—Denver—Los Angeles—New York—Phoenix—Portland—San Francisco—Seattle—Tampa—Montreal—Toronto—Vancouver—Winnipeg—New Orleans—Philadelphia
EXPORT OFFICE: Toledo, Ohio

For pails and drums

the name INLAND is your best guide to dependable quality

You take no chances with product packaging when you use Inland Steel Containers. They assure perfect protection . . . are leakproof, sift-proof, air-tight.

Available with the right closure for any requirement—and colorful Inland lithography or printing to add appeal, sell your name wherever your product goes.

It's better to ship in steel — and best to ship in Inland Steel Containers, the most durable drums and pails made anywhere today. Write for complete information.

A-11E

INLAND STEEL CONTAINER COMPANY

6532 South Menard Ave. • Chicago 38, Illinois
Jersey City • CHICAGO • New Orleans

SOAP PLANT OBSERVER

By John W. McCutcheon

MUCH has been said in recent years about continuous methods of producing soap and their value to the industry. The principal methods have been reviewed and evaluated in this colum from time to time.

Commercially important methods in operation are the Procter and Gamble high pressure hydrolysis and continuous saponification method; the Sharples centrifugal method; and the Monsavon counter current tower washing method.

The Colgate-Emery process should not be confused with the Procter and Gamble method. Although basically, both hydrolyse the fat in similar fashion, the former method does not cover soap making procedure. This is certainly not well understood, as numerous inquiries reaching this desk indicate.

Of less general application are the Clayton process, the alcoholysis process of du Pont (Bradshaw Meuly) and the solvent hydrolysis process of the late Dr. Kokatnur.

A British writer, M. K. Schwitzer, has written a book, published recently by Leonard Hill, Ltd., London, on "Continuous Processing of Fats." While no attempt will be made to review this book here, the several chapters bearing on fat splitting (IV), and soapmaking (VIII), were studied with some care. While the methods were not reviewed critically, they were presented in an easily understandable, straightforward way, which made delightful reading. It also indicated a very thorough and painstaking study on the part of the author. A very extensive list of references is given at the end of each section covering all of the important patent references very thoroughly. The eight chapters (343 pages) cover continuous methods of extracting and refining oils and fats, separating the constituent glycerides or acids and processing them to various edible and inedible products. We

MR. McCUTCHEON

recommend the book highly to everyone in this field.

Continuous methods of producing soap in general, are not cheap. The engineering design and the highly complicated controls necessary to integrate the plant have made it essential that production be on a fairly large scale. The smallest Sharples unit for example, is for about 10 million pounds a year. Hydrolysis plants begin at capacities of about 20 million pounds a year. Crystallizers which separate the saturated and unsaturated acids run between 25 and 50 million pounds annually. This last item is not a soap process but was included here with a very definite purpose in mind—namely, to point out that these and other continuous methods of oil processing will have a tremendous impact on the detergent industry in general. They bid fair to revolutionize the types and sources of raw materials available for chemically processing of not only soaps but also synthetic detergents.

The high capitalization necessary, plus the greater production facilities and greater technical skill required for operation, will probably have a tendency to alter the present relationship between fat producer and consumer. It is not inconceivable that eventually all the soapmakers will purchase fatty acids instead of fats from large centrally located producing units, according to specifications set up for their products, and the soapmaker will in turn use such acids in continuous processes. Even at the present time, in the manufacture of liquid soaps, there is a positive tendency to use acids in preference to oils. Operation with fatty acids will enable the small producer to become more diversified. For example, he will not need to invest in glycerine recovery equipment, with its subsequent cost of supervision, losses and sales effort. He will be able to make a wide variety of fat-based synthetic detergents and emulsifying agents. The greatest present difficulty to this scheme is the difficulty of transporting light colored fatty acids. Coated on steel drums and aluminum tank cars are now used. The first is not very satisfactory, the second and third items are not available or are too expensive. This is a problem which is in dire need of solution.

Continuous plants are able to handle a wider range of raw material. When a company invests several million dollars in a plant, it includes usually only the best type of fractionation equipment, permitting for example the production of 90% palmitic acid from cottonseed oil foots. A medium-sized soaper seldom has such equipment available and if he has, he does not have the production facilities to keep it in continuous operation. Continuous plants also are more economical to operate. There is no heat loss due to shutting down and starting up. There is less lag in quality or return scrap materials to the process due to re-adjustment. There is less labor involved. One large fatty acid plant recently visited looked like Goldsmith's "Deserted Village." There were so few operators in sight that the plant was thought to be shut down.

A continuous plant is one in which material is pumped in one side

OWNERS AND DISTRIBUTORS OF THE WILSON GLIDER CLOSURES

ROUBECHEZ, Inc. 8 EAST 12th STREET NEW YORK 3, N. Y.

A Profitable Market for Soap Makers and Chemical Firms

All Textile Mills with Dye Houses and all Dyers are Reported in Complete Detail

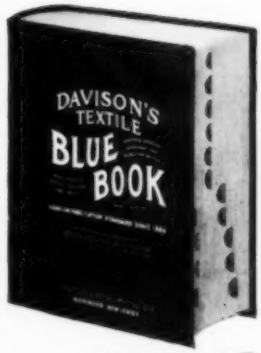
"An Authority in Textiles for Over Eighty-six Years"

THE NEW 86th YEAR TEXTILE BLUE BOOK is not new in a superficial way. It is new in the essential things that count in a complete guide to the nation's second largest industry—TEXTILES; new from cover to cover in all its more than fifteen hundred pages—new items and new mill reports—new information on some twenty-six thousand dealers in Allied Lines—new in up-to-date information on markets you can sell with profit—new in giving thousands of sources where you can save in buying. Old books are obsolete, expensive to use and unreliable, due to an enormous number of changes, all incorporated in the

Revised 86th Year Latest Davison's Textile Blue Book*

*(Reg. U. S. Pat. Off.)

The large book in the office for circularizing, mailing, telephoning or reference, the small one for your salesmen or traveling executives, will pay their low cost in a few days!



Office Edition, $9.25
Handy Edition, not illustrated $6.50
Textile Directory for Salesmen, $5.00
Over 1500 Pages, Cloth and Gold with Thumb Indexes. New easy to read type in all reports.

DAVISON PUBLISHING COMPANY

"Standard Textile Publications Since 1866"

RIDGEWOOD Phone RI 6-3136 NEW JERSEY

and a product pumped out the other in a continuous manner. There is no law against having a wait tank in between, provided a man doesn't have to stand by filling or emptying it. A kettle house would be a continuous process unit if the duties of the soap boiler could be done automatically. This could actually be accomplished. However, it would be too complicated to be of value, since, by engineering the reaction chamber to small dimensions, the need of highly complicated controls is eliminated. The continuous process became of age with the incorporation of instrumentation. There is no limit as to how far this can go. For example, fats are now split, distilled and saponified continuously or they may be crystallized continuously, fractionated continuously, or esterified continuously. Or the soap may be washed continuously. There is no reason why any two or more of these processes could not be harnessed in tandem to do a multitude of things undreamed of today. For example, a red oil or a palmitic acid soap, or both separately, could be made by combining the alcoholysis method of du Pont with continuous fractionation and continuous saponification. The solexol process coupled with continuous fat splitting with or without distillation plus solvent crystallization could produce red oil and stearic acid. Continuous hydrogenation methods could be coupled in between. Or the alcoholysis method plus the liquid furfural process combined with the M. W. Kellogg destearinizing process to yield high grade soap acids from fish oils, etc. The factors preventing immediate application probably are two-fold. (1) The need for a larger market for specialized fatty acids and (2), reasonable licensing arrangements on existing patents.

◆

Booklet on "Triton"

Rohm & Haas Co., Philadelphia has issued a 48 page booklet covering the nature, grades, properties and applications of "Triton" surface-active agent. The booklet is illustrated and contains ten tables of record data on surface tension, wetting time, foaming values and other properties.

Maintenance Show Report

The proceedings of the 1951 Plant Maintenance Conference, held last January in Cleveland in connection with the second Plant Maintenance Show, are now available. Published under the title "Techniques in Plant Maintenance — 1951," by Clapp & Poliak, Inc., 341 Madison Ave., New York, managers of the show, the book sells for $6.00. It contains 228 pages, 8½ x 11 inches, and is illustrated with 48 tables, diagrams, illustrations, graphs and charts. The book is bound with cloth over board and has gold-stamped titles. It is printed and bound this year instead of mimeographed as was last year's proceedings. Subjects covered in formal papers and in 544 questions and answers include housekeeping, floors and standards of sanitation, maintenance in chemical plants, in food processing plants, personnel training for maintenance, etc.

◆

Alsop Issues Catalog

Alsop Engineering Corp., Milldale, Conn., recently announced a 32-page catalog on its line of liquid processing equipment for plant personnel. The booklet contains illustrations, charts and diagrams on filters, filter discs, mixing and storage tanks, portable mixers, agitators and transfer pumps. Parts lists and application and performance data are included.

◆

New Packaging Machine

Plageman Enterprises Packaging Equipment, Willoughby, O., recently announced a new type powder packaging machine, which incorporates a new process of measuring and agitating the product. According to the company, the machine operates well on all types of powders and granules, regardless of their dryness or moisture content. The efficiency of the machine is claimed not to be affected by atmospheric conditions. A multiple paddle rotor revolving in a cast aluminum housing is equipped with agitators to keep the product free flowing. This rotor also employs a device for closing off the flow while the measuring cup discharges its load. Model PPO-1 weighs 98 pounds, requires approximately 14 x 18 inches of floor space and stands about 60 inches high.

◆

Hercules CMC Booklet

Hercules Powder Co., Wilmington, Del., has recently issued a booklet on Hercules "CMC-CT," the unpurified cellulose gum used to improve whiteness retention properties of syntic detergents and built tallow soaps. The eight-page booklet describes the product and lists its typical properties.

Typical formulas of "CMC-CT" with synthetic detergents and built tallow soaps are also given.

◆

Tallow Chart Available

American Mineral Spirits Co., Chicago, recently announced a tallow miscella concentration chart for processors. The chart covers mixtures of tallow in commercial heptane, giving the concentration by weight.

◆

New Hand Labeling Device

Nelson Label Machine Corp., East Orange, N. J., recently issued a pamphlet describing their new autofeed labeler. Known as Model F, the machine handles labels from one half inch to five inches in width and in any length over two inches.

◆

NPA Publishes Outline

A brief, non-technical outline of the principles and procedures of the Controlled Materials Plan, which became effective July 1, was issued recently by the National Production Authority. The booklet, entitled "ABC's of CMP," is intended for readers with a general interest in CMP, as well as by manufacturers who will be directly affected by its operation. However, manufacturers will receive detailed information in the form of regulations, application forms and instruction sheets. Text of the booklet is divided into 12 sections, as follows: CMP and the Defense Program; CMP Defined; CMP Fundamentals: Government's Role in CMP; Industry's Role in CMP; CMP Product Classification; Scope of CMP; CMP in Operation; Principal Regulations: CMP Definitions; NPA Industry Divisions; CMP Materials.

New Trade Marks

(From Page 75)

Bridgeport. Claims use since May 15, 1950.

Antibac-25—This for germicidal rinse for use as a sanitizing agent. Filed July 20, 1950 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since May 1, 1950.

DN-289—This for insecticide. Filed Aug. 5, 1950 by Dow Chemical Co., Midland, Mich. Claims use since Feb. 12, 1947.

Dowklor—This for chemical composition used as insecticides and ingredients of insecticides. Filed Aug. 5, 1950 by Dow Chemical Co., Midland, Mich. Claims use since Mar. 10, 1947.

G-5—This for chemical compound suitable as active ingredient in bactericidal preparations such as soap, shaving cream, etc. Filed Aug. 10, 1950 by Sindar Corp., New York. Claims use since July 14, 1950.

Skip-Tick—This for insecticidal powder for use on dogs. Filed Sept. 13, 1950 by Polk Miller Products Corp., Richmond, Va. Claims use since Aug. 8, 1950.

Chem-Ag—This for insecticides. Filed Sept. 18, 1950 by Chem-Ag Corp., San Francisco. Claims use since Mar. 2, 1950.

Banarat—This for rodenticides. Filed Sept. 25, 1950 by American Scientific Laboratories, Inc., Madison, Wis. Claims use since Sept. 12, 1950.

Quindex—This for mildewproofing compounds. Filed Sept. 28, 1950 by Nuodex Products Co., Elizabeth, N. J. Claims use since Aug. 17, 1950.

Aliento—This for insecticides. Filed Sept. 30, 1950 by California Spray-Chemical Corp., Richmond. Claims us since July 15, 1950.

Ortho—This for insecticide sprayer attachments for garden hoses. Filed Feb. 11, 1950 by California Spray-Chemical Corp., Richmond, Calif. Claims use since May 27, 1949.

Fungi-Way—This for antiseptic preparation for relief from athlete's foot. Filed Apr. 25, 1950 by P. D. G. Products, Burlington, N. C. Claims use since Oct. 25, 1948.

Turn-Er's—This for shampoo. Filed Sept. 1, 1949 by Guy L. Turner Mfg. Co., Boise, Idaho. Claims use since May 1, 1946.

TineyLustra—This for polish for leather goods. Filed Oct. 15, 1948 by Barton Manufacturing Co., St. Louis. Claims use since Oct. 15, 1947.

Velva-Sheen—This for liquid preparation for polishing and cleaning furniture, floors, etc. Filed Mar. 17, 1949 by Velva-Sheen Co., Denver. Claims use since Jan. 1, 1933.

LaFrance—This for automobile and floor wax. Filed May 22, 1950 by Alpha Chemical Co., Baltimore. Claims use since Aug. 28, 1929.

Ecco-Temo—This for toilet bowl deodorants. Filed Nov. 4, 1948 by Rochester Germicide Co., Rochester, N. Y. Claims use since Jan. 2, 1918.

Diapersol—This for germicide for treating diapers, etc. Filed July 27, 1949 by Mark Laboratories, Inc., Pittsburgh. Claims use since Jan. 5, 1948.

Wintermint—This for disinfectant deodorant. Filed Oct. 4, 1949 by Selig Co., Atlanta. Claims use since May 5, 1949.

Z-4—This for liquid deodorant. Filed Aug. 2, 1949 by U. S. Chemical & Supply Co., Kansas City, Mo. Claims use since Jan. 1, 1946.

Spandy—This for household germicide. Filed July 11, 1950 by G. N. Coughlan Co., West Orange, N. J. Claims use since July 7, 1950.

Menth-O-Snow—This for shaving cream. Filed Nov. 4, 1950 by C. B. Dicks, Jr., Co., New Orleans. Claims use since Oct. 18, 1950.

Aglow—This for hair shampoo. Filed Nov. 26, 1948 by Bonat & Bonat, Inc., New York. Claims use since Dec., 1947.

Stabrite—This for floor cleaners. Filed Nov. 30, 1948 by Templar Oil Products Co., South River, N. J. Claims use since May, 1925.

Drew-Purrge—This for liquid mixture of organic chemicals for removing sludge from gasoline combustion type engines. Filed Dec. 21, 1948 by E. F. Drew & Co., New York. Claims use since Aug. 15, 1947.

Perlium—This for shampoo for use on pets. Filed Mar. 25, 1949 by Colonial Chemical Co., Seattle. Claims use since Apr. 1, 1946.

Sexton—This for soaps in cake, powder, granular and liquid forms. Filed May 12, 1949 by John Sexton & Co., Chicago. Claims use since March, 1944.

Ringlis—This for general household cleanser having water conditioning properties. Filed May 21, 1949 by Theobald Industries, Kearny, N. J. Claims use since June 7, 1949.

Positive—This for hair cleanser. Filed July 25, 1949 by Marengo Industries, Inc., Marengo, Ill. Claims use since June 20, 1949.

T—This for toilet soap and laundry soap. Filed Aug. 9, 1949 by Consolidated Cosmetics, Chicago. Claims use since Sept. 10, 1931.

Kay Daumit—This for toilet soap. Filed Sept. 22, 1949 by Kay Daumit, Inc., Chicago. Claims use since May 5, 1949.

Pry—This for chemical cleanser and disinfectant for toilet bowls and urinals. Filed Nov. 8, 1949 by Pry Corporation of America, Brooklyn. Claims use since Sept. 23, 1949.

Kali—This for toilet soaps. Filed Nov. 10, 1949 by Les Parfums de Dana, Inc., New York. Claims use since Mar. 3, 1944.

Delastone—This for detergent for removing milkstone deposits on dairy equipment. Filed Nov. 18, 1949 by Delaval Sales and Service, Inc., Poughkeepsie, N. Y. Claims use since Sept. 14, 1942.

Nordall—This for liquid cleaning compound of the emulsion type particularly adapted for cleaning metal surfaces in the industrial arts. Filed Sept. 30, 1950 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Aug. 28, 1950.

New Dodecyl Benzene Unit

A new plant for the manufacture of dodecyl benzene, used in making synthetic detergents, went into production recently at the Wood River, Mo., refinery of Shell Oil Co., New York. The product, one of the alkylated aromatics, is being marketed by Shell Chemical Corp., according to L. V. Steck, vice-president.

John W. Baker Retires

John W. Baker, president of Philippines Refining Corp., New York, retired recently after over 30 years in the fats and oils industry. A former president of the Oil Trades Association, he served as a dollar-a-year man on the War Production Board and the War Food Administration in World War II. He also headed the Philippines-American Chamber of Commerce at one time.

New Wax Booklet

Cornelius Products Co., New York, recently issued a 32-page booklet entitled "Waxes For Polishes and Finishes." The booklet, in its seventh edition, contains up-to-date procedures, new Government specifications, products and formulations plus a number of newly introduced products.

Some of the new text features in the booklet are: (1) a chapter on performance testing of wax emulsions; (2) additive solutions for wax emulsions and a table on the use of additives with "Emulsowaxes"; (3) a summary of emulsion manufacturing equipment; and (4) a revised chapter on freezing tests.

New products appearing in the booklet for the first time are: three basic water emulsion wax formulations and a new formula for water emulsion paste wax and also a synthetic resin, "Nylac 14," which is recommended for use in varying amounts with many of the wax emulsion formulations.

SANITARY PRODUCTS SECTION

Insecticides • Disinfectants • Moth Products
Floor Products • Polishes • Chemical Specialties

KRANICH SOAPS

COSMETIC

Liquid Castile Soap Shampoo
Liquid Coconut Oil Soap Shampoo
Liquid Olive Oil Soap Shampoo
(50% Olive Oil Base)
Shampoo Base Soap

MAINTENANCE

Liquid Toilet
40%, 30%, 20% Coconut Oil
Potash Vegetable Oil
Soft 40%, Hard 65%, Scrub 20%

PHARMACEUTICAL

U.S.P. Green Soap
U.S.P. Powdered Castile Soap
Powdered Coconut Oil Soap

30 years in business and one of America's leading manufacturers of soaps ONLY is a testimonial to the standard quality of our products.

Kranich Soap Company, Inc.
54 Richards Street Brooklyn 31, N.Y.

KRANICH SOAPS

helping
to
keep

SALES IN HIGH GEAR...

and

COSTS LOW!

FOR MORE than half a century, MM&R has cooperated in solving neutralizing, perfuming and related problems for leading manufacturers in the soap, detergent and chemical specialties industries. And MM&R has supplied these manufacturers with the basic perfuming materials necessary to keep the sales of their hundreds of products *humming*.

The complete stocks, the technical know-how, the proven reliability of MM&R are worth a great deal *extra* to MM&R customers. But they cost nothing extra! Because MM&R is a prime producer, importing directly and using its own manufacturing facilities, MM&R is able to offer its outstanding products at prices which are always right.

Let us quote on your requirements
or write for full information today.

Builders of
PRODUCT PREFERENCE
through
QUALITY ESSENTIAL OILS
NEUTRALIZERS
and PERFUMING MATERIALS
Since 1895

MAGNUS, MABEE & REYNARD, INC.

SINCE 1895 ... ONE OF THE WORLD'S GREATEST SUPPLIERS OF ESSENTIAL OILS

16 DESBROSSES STREET, NEW YORK 13, N. Y. • 221 NORTH LA SALLE STREET, CHICAGO 1, ILL.

LOS ANGELES: BRAUN CORP. • SEATTLE, PORTLAND, SPOKANE: VAN WATERS & ROGERS, INC. • SAN FRANCISCO: BRAUN-KNECHT-HEIMANN CO.

WHY SETTLE FOR LESS THAN THE BEST

and the *BEST* is

Odorless
Harmless
Stainless

SECTO-VAP

Revolutionary Scientific Discovery

KILLS FLYING INSECTS

√ AUTOMATICALLY √ CONTINUOUSLY

These thermostatically controlled units of streamline design will sell on sight. The grey crackle finish spells quality and sales appeal and the efficient, automatic, completely trouble-free self vaporizing action requires no attention. Leading hotels, restaurants, food establishments, bakeries, bars, and other types of businesses have found SECTO-VAP the answer to the menace of flying insects. It is unconditionally Guaranteed and comes packed with a supply of chemicals that are harmless to humans, warm blooded animals and food. Sold from coast to coast.

A request on your letterhead will bring full money making details.

Here is the most profitable deal ever offered on an item that means repeat business on every sale.

Select Territories still available

Advertising material and mats available on request

MANUFACTURED AND SOLD OUTRIGHT BY

CARDINAL *Chemical* CORP.

WATER & McKEAN STREETS
PHILADELPHIA 48, PA.

DUREZ RESINS

...the big reason why NO-RUB LIQUID WAXES are better

During the very years when pure waxes have been most difficult to get, leading liquid polish manufacturers have found a way to produce a constantly improved product. How has this been done? Largely through the use of the special phenolic resins that have resulted from cooperation between Durez and forward-looking emulsion wax makers.

Better Quality, Low Cost

In properly formulated resin-bearing wax emulsions, the outstanding properties of hardness and slip resistance are accentuated. Polishes made with these resins also have remarkable gloss retention, water resistance, and wearability, and they store without losing these properties.

The Durez resins are commonly used in concentrations of from 25% to 50% of the total wax-and-resin portion of the emulsion. In view of the sharp increase in raw wax prices, this means that housewives and building owners are getting excellent dollar value as well as quality.

Use Ordinary Equipment

Having inherent properties that are especially desirable in wax-resin blends, these resins offer excellent compatibility with carnauba and candelilla, and the micro-crystallines. Blending by the emulsion wax manufacturer using ordinary steam-jacketed equipment is common practice since Durez introduced the modified 13560 and 14140 resins. These two resins have a melting point of about 90°C. and are emulsifiable and compatible with both vegetable and mineral waxes. Their hardening characteristics are outstanding, especially in formulations containing micro-crystalline waxes.

Durez 14140 resin, which is made from a higher melting point base resin, produces harder films with less tack than 13560 resin. These resins are modifications of Durez 219 and 225, which have a long record of service in the wax polish industry . . . 219 melts at 135°C. and 225 at 155°C.

Send for Experience Data

The facilities of our Customer Service Laboratory are always at your command for consultation. We also have compiled some practical suggestions based on our extensive research work on formulations and methods of making emulsions and controlling properties. A copy is available on request.

Write Durez Plastics & Chemicals, Inc., 407 Walck Road, North Tonawanda, New York.

For blending with waxes in steam-jacketed kettles

DUREZ

PHENOLIC RESINS

- MOLDING COMPOUNDS
- INDUSTRIAL RESINS
- PROTECTIVE COATING RESINS

PHENOLIC RESINS THAT FIT THE JOB

ARMOUR Chemical Division

Fatty Acids
Long-Chain Fatty Acid Derivatives
Industrial Oils

Low-Temperature Solvent Crystallized Oleic Acid

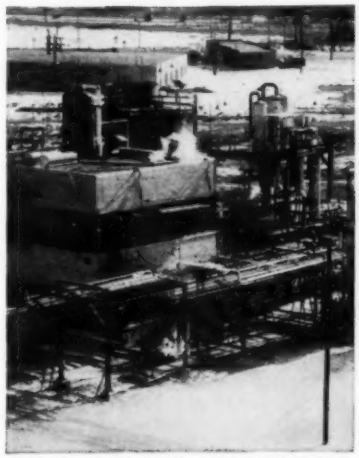
Another new product has been added to Armour's line of fatty acids. Already the manufacturer of the most complete line of high-purity distilled fatty acids that can be found anywhere, the Armour Chemical Division now offers low-temperature solvent crystallized oleic acid.

This exclusive process offers users of oleic acid a product that has advantages not found in ordinary distilled or pressed products. The extremely low temperatures employed guarantee a substantially lower saturated acid content than conventional types of oleic acid. In addition, solvent crystallized oleic acids are ester-free materials since the solvent used is not reactive with fatty acids. This new product is characterized by bland odor and has excellent heat stability.

Armour's low-titer White Oleic Acid meets U. S. Pharmacopeia specifications and is recommended for those uses that require a light-color as well as a low titer. For applications that require a low titer but not a very light color, low-titer Distilled Red Oil is recommended.

White Oleic Acid
(Low Titer)

	Min.	*Max.*
Titer	—	5°C
Iodine No. (Wijs)	90	95
Acid Value	195	201
Saponification Value	195	201
Unsaponifiable	—	2%
Color (Lovibond 5¼" tubes)	—	1.5R-15Y



Crystallization Unit at Armour's McCook Plant

Distilled Red Oil
(Low Titer)

	Min.	*Max.*
Titer	—	5°C
Iodine No. (Wijs)	90	95
Acid Value	193	200
Saponification Value	193	200
Unsaponifiable	—	3%
Color (Lovibond 1¼" tubes)		4.0R-40Y

Armour's Oleic Acids are available in 55-gallon drums and aluminum tank cars. Write today for samples and prices.

Use of Fatty Acids in Insecticides, Fungicides and Disinfectants

Fatty acids are widely used in preparing spray emulsions for insecticides, fungicides and disinfectants. A soluble oil base is prepared in which the active ingredients of the finished spray are dispersed. Before application, this base is diluted with water.

The emulsifying action in these oil solutions is brought about by the presence of soaps, sulfonated oils, etc. Soda, potash, or triethanolamine are the preferred saponification agents for making these soaps. Generally these soaps are formed "in situ" by the saponification of vegetable fatty acids, fish oil fatty acids, oleic acids, etc., with the desired alkali or alkaline-like material.

Whenever practical the use of emulsions for insecticides, disinfectants, etc., is the most economical method to employ, since any desired dilution with water may be obtained. It is also possible to control the emulsion stability so that either quick breaking or stable emulsions result, thus controlling the release of the active ingredient after application. For these emulsions the Armour Chemical Division recommends Red Oils and Oleic Acids.

FREE INFORMATIVE BOOKLET—Write for the concise detailed booklet, "The Selection and Use of Fatty Acids" which indicates how various products can be improved through the use of fatty acids and their derivatives.

Applications discussed include: protective coatings, water-soluble soaps, cosmetics and toiletries, textiles, waxes and polishes, lubricants, synthetic detergents, synthetic resins, and rubber.

Cationic Emulsifiers for Insecticides

Many industrial emulsion applications utilize the special properties of cationic emulsions. Because these emulsions are made with cationic active emulsifiers, their oil phases can be exhausted on many types of surfaces. In applying oily materials to surfaces by means of emulsions, greater and more uniform pickup and better adherence of the oil is obtained when the emulsion is cationic.

Arquad 2C (oil-soluble quaternary ammonium compound) is an excellent emulsifier and strongly cationic. However, to insure maximum hard water stability the presence of an Ethofat (non-ionic) is also used in the concentrate.

Demand for these chemicals has been particularly heavy and we regret that we are not always able to meet this demand. However, we expect this situation will improve soon. In the meantime, your experimental work with these chemicals will permit their earlier use in your products.

The following are suggested formulas for effective cationic insecticide emulsions:

Formula No. 1

65% Toxaphene
25% Xylol or Kerosene
5% Arquad 2C
5% Ethofat 142/20

Formula No. 2

45% Chlordane
50% Kerosene
2.5% Arquad 2C
2.5% Ethofat 142/20

Write for further information or samples.

Mail this Coupon

Please send additional information on

- .....
- .....

Name.....*Title*.....

Firm.....

Address.....

City.....*Zone*....*State*.....

ARMOUR Chemical Division
Armour and Company
1355 W. 31st St., Chicago 9, Ill.

...a Pair of Aces for Low Pressure Aerosols

A For a "container-and-valve," all in one, put your chips on Continental's exclusive "Fingertip" dispenser. It's the *only* container with a built-in valve, and it's tops for low-pressure dispensing of fine spray products, like insecticides, household deodorants and similar preparations.

A For container alone, Continental's dome top pressure can is a sure winner. It's streamlined, has a quality appearance, is versatile — ideal for packaging a wide range of products, from insecticides to paint.

When dealing with low-pressure aerosols, this pair of Continental products is hard to beat. Continental is not only one of the largest manufacturers of low-pressure aerosol cans for non-food products, but also the only supplier of both container and valve — and container alone. And here's an ace in the hole: both cans can be fully lithographed in bright, attractive colors.

CONTINENTAL CAN COMPANY

CONTINENTAL CAN BUILDING
100 East 42nd Street, New York 17, N. Y.

Eastern Division: 122 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4

Protect Your Production

WITH

MGK Allethrin

IN AEROSOLS

Plan to *increase* your sales of aerosols in 1951 despite the short supply and higher price of pyrethrin. Use MGK Allethrin, "264" and DDT alone, or in combination with the famous Pyrocide 175, and make savings as high as 3¢ per bomb in your costs while maintaining top quality, high volume of production and sales to increase your 1951 profits sharply.

Improved quality and reduced cost can *both* be accomplished with MGK Allethrin.

Most aerosols now contain pyrethrins, DDT, synergist, solvents and propellants. By substituting MGK Allethrin for part of the pyrethrins and by using a suitable synergist, such as MGK "264" which works equally well with both pyrethrin and allethrin, quality and cost both can be improved. A few formulations are recommended which contain MGK Allethrin substituted entirely for pyrethrin and these can be advertised as entirely synthetic, and of completely domestic origin. All of these formulations containing MGK Allethrin have been under test by independent laboratories for more than a year. All either exceed, or at least equal, the TOTA standard and the pyrethrin-containing commercial aerosols with which they have been compared as to knockdown and killing power. Better results on cockroaches are an outstanding feature of aerosols containing MGK "264".

Extensive biological reports are available to you to show performance of many combinations of these toxicants. Better yet, federal approval under Patent No. 2321023 has already been obtained for several formulations.

We offer completed formulations ready for aerosol packing, for those who wish to do the minimum of processing. And, for those who find advantage in processing a portion, we offer intermediate formulations containing the toxicants and synergists. For those who prefer to do all the processing, we furnish separate toxicants which are the purest on the market.

McLAUGHLIN

GORMLEY

KING COMPANY

The superior quality and extreme economy of these products will interest you.

Mail THE COUPON TODAY

McLaughlin Gormley King Co.
1715 Fifth Street S.E., Minneapolis, Minnesota

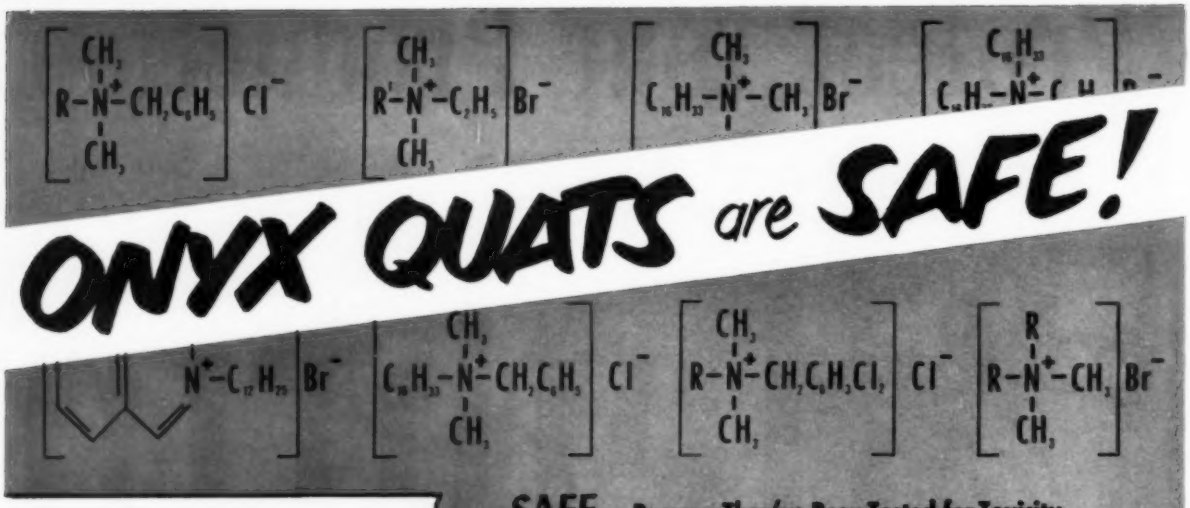
● Please send details on the use of MGK Allethrin in aerosols.

Name_____

Department_____

Address_____

City_____ Zone_____ State_____



ONYX QUATS are SAFE!

TOXICITY TEST DATA

These four Onyx Quaternaries have been exhaustively investigated by an independent biological laboratory to determine these questions of toxicity and irritation. Their findings have shown conclusively that all four are non-toxic, non-irritating and non-sensitizing in all use-dilutions of 1-1000 or weaker, and that there is no danger of cumulative toxic action due to chronic ingestion of any residues left on food equipment due to inadequate rinsing. These findings are the result of . . .

1. Acute and sub-acute toxicity on guinea pigs, white rats and dogs.
2. Chronic toxicity tests based on daily ingestion of sub-lethal, but moderately heavy dosages, carried out on guinea pigs for one year, and on white rats for two years.
3. Skin irritation and sensitization tests made on 200 humans.

We welcome your comments on these questions of sensitization and toxicity, and shall be glad to cooperate with you in answering any misconceptions you may run into.

SAFE... Because They've Been Tested for Toxicity.
SAFE... Because They're Uniform Chemical Compounds.
SAFE... Because They Do Not Deteriorate in Storage.
SAFE... Because Application Techniques are Field-Proved.

Onyx has always been a leading factor in the production of quaternary ammonium salts. We make a greater variety of these compounds than any other manufacturer. Some of these are of interest to research departments. Others are used in highly specialized fields. Four of the Onyx Quats, however, are of broad interest in the field of sanitization, algae control, fungicidal treatments and deodorization. Each of these four Onyx Quats has been tested for toxicity and proved for application values in the fields to which they apply. Here they are . . .

BTC* — Alkyl dimethyl benzyl ammonium chloride. The most widely used cationic bactericide and deodorant. Sold in 50% aqueous solution to disinfectant and germicide manufacturers for dilution and/or incorporation in their own products.

TETROSAN — Alkyl dimethyl 3,4 dichloro benzyl ammonium chloride, plus alkenyl dimethyl ethyl ammonium bromide. In extensive use as a disinfecting, deodorizing and preventive antiseptic in veterinary and livestock medicines. Also used in pharmaceuticals for topical applications. Sold in 60% aqueous solution.

ISOTHAN Q15* — Lauryl isoquinolinium bromide. An excellent fungicide. Widely used in the formulation of compounds for use in the control of athlete's foot and dandruff. Sold in 20% aqueous solution.

ONYXIDE* — Alkenyl dimethyl ethyl ammonium bromide. The most effective algaecide now available. In wide use in swimming pools, cooling water, air-conditioning systems, etc. Sold as a 75% concentrate in isopropanol or propylene glycol.

*Trade Mark Reg. U.S. Pat. Off.

If you are interested in any one of these particular "quats," please ask for data. Onyx BTC is covered in a very thorough technical handbook which also outlines the major characteristics of the quaternaries.

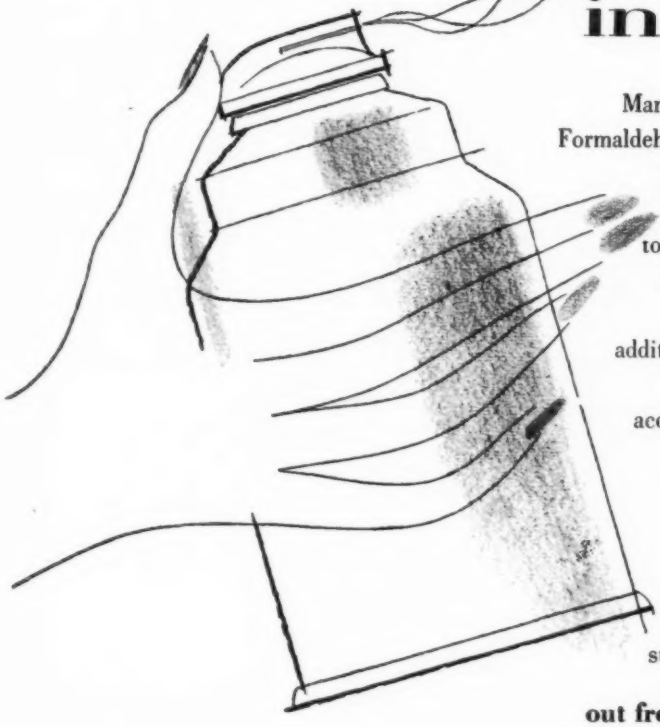
onyx

ONYX OIL & CHEMICAL COMPANY
INDUSTRIAL DIVISION
186 WARREN ST., JERSEY CITY 2, N. J.
CHICAGO • BOSTON • CHARLOTTE • ATLANTA

In Canada: Onyx Oil & Chemical Co., Ltd., Montreal, Toronto, St. Johns, Que. For Export: Onyx International, Jersey City 2, N. J.

D&O AEROSOL FRAGRANCES
PUT YOUR PRODUCT

out front
on display
in demand



Manufacturers of Room Deodorants, Insecticides, Formaldehyde Sprays, Detergents, Liquid Soaps, Polishes, Waxes and Cosmetic Products are all agreed they face keener, tougher competition in the days immediately ahead. These manufacturers also acknowledge the need for additional promotional and merchandising aids to make their products more acceptable, more saleable to the consumer.

Recognizing this need, the D&O Laboratories have developed a comprehensive series of tested Aerosol fragrances that are bound to add forceful, persuasive, compelling subtleties that will put your product...

out front, on display, in demand.

D&O ESTABLISHED 1798

DODGE & OLCOTT, INC.
180 Varick Street • New York 14, N. Y.

ATLANTA • BOSTON • CHICAGO • CINCINNATI • DALLAS • LOS ANGELES • PHILADELPHIA • ST. LOUIS • SAN FRANCISCO
ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES • VANILLA • FLAVOR BASES

For over 36 years
the industry's leaders
have been members of

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION, INC.

LEADING manufacturers in the fields of floor waxes and other floor finishes, disinfectants, sanitizers, soap and detergent specialties, household insecticides and moth products, aerosol specialties of all types, and allied chemical specialties are members of CSMA.

Large and small, old and new, these leading firms have comprised the membership of CSMA (formerly National Assn. of Insecticide & Disinfectant Manufacturers) for over 36 years.

The newly expanded activities of CSMA may have interesting advantages for your company. Dues are moderate; services and contacts valuable. If we can give you further information about membership, we shall be glad to do so.

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION, INC.

110 East 42nd Street **New York 17, N. Y.**

L. J. Oppenheimer, President **H. W. Hamilton, Secretary**

Why "Freon" propellents are tops for

ROOM DEODORANTS

INSECTICIDES—Space

INSECTICIDES—Surface-coating

MOTHPROOFERS

PAINTS

COSMETICS

FOAM PRODUCTS
—Shaving lathers, shampoos, etc.

PLASTIC COATINGS

WATERPROOFERS

. . . and many others

"Freon" propellents are ideal for products of this type. They can be used with selected aromatics required for neutralizing, and with other aromatics for masking purposes. In addition, these propellents can readily be used with chemical agents recently developed for destroying undesirable odors. Concentration of these active ingredients in the aerosol generally varies between 0.5 and 10%, depending upon specific formulations.

TYPICAL "FREON" PROPELLENT SOLUTION FOR ROOM DEODORANTS

Recommended for room deodorant aerosols is a "Freon-11"—"Freon-12" solution that provides approximately 38 pounds pressure per square inch gauge. This produces a mist containing the fine particles which are necessary to do the most effective job of deodorizing. This "Freon" solution has proved exceptionally successful, and it is widely used in the production of room deodorants as well as other aerosol products.

"FREON" PROPELLENTS ARE VERSATILE

There are, of course, many formulations of active ingredients with propellent solutions, and the versatility of "Freon" safe propellents readily allows preparation of tailor-made solutions to meet requirements of the three basic kinds of aerosols: space, surface-coating and foam.

If you are planning to manufacture an aerosol-packaged product . . . remember that it can be made better with dependable "Freon" safe propellents. Write for technical assistance at any time. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

OUTSTANDING QUALITIES OF "FREON" PROPELLENTS

1—Nonflammable, nonexplosive.
2—Of extremely low order toxicity.
3—Noncorrosive.
4—Stable and of uniform quality.
5—Available in a wide range of pressures.
6—Good solvent properties.
7—Applicable to all types of aerosols.

"PACKAGE FOR PROFIT"

New . . . a 32-page, illustrated book containing a wealth of up-to-the-minute information about the expanding aerosol market and the use of "Freon" safe propellents. Request a free copy on your letterhead today.

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

KINETIC

FREON
SAFE PROPELLENTS

"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents

Aerosol-minded?

Spray away sales troubles

with DU PONT PERFUME OILS

depend on Du Pont

Odor appeal helps product appeal! Creative skill . . . technical knowledge . . . Du Pont perfumers and chemists use both in formulating a series of tested, dependable perfume oils for all kinds of aerosol products. Here are some popular types:

FOR INSECTICIDES AND MOTHICIDES:

"Alamask" ND	(bouquet)	$2.75 per lb.*
"Alamask" CA	(cedar)	2.20 " " *

FOR SPACE ODORANTS:

Bouquet SP	(spicy)	$5.25 per lb.*
Bouquet PB	(pine balsam)	2.75 " " *

FOR COSMETICS AND SPECIALTIES; add new sales appeal with our individualized recommendation.

** Prices subject to change without notice.*

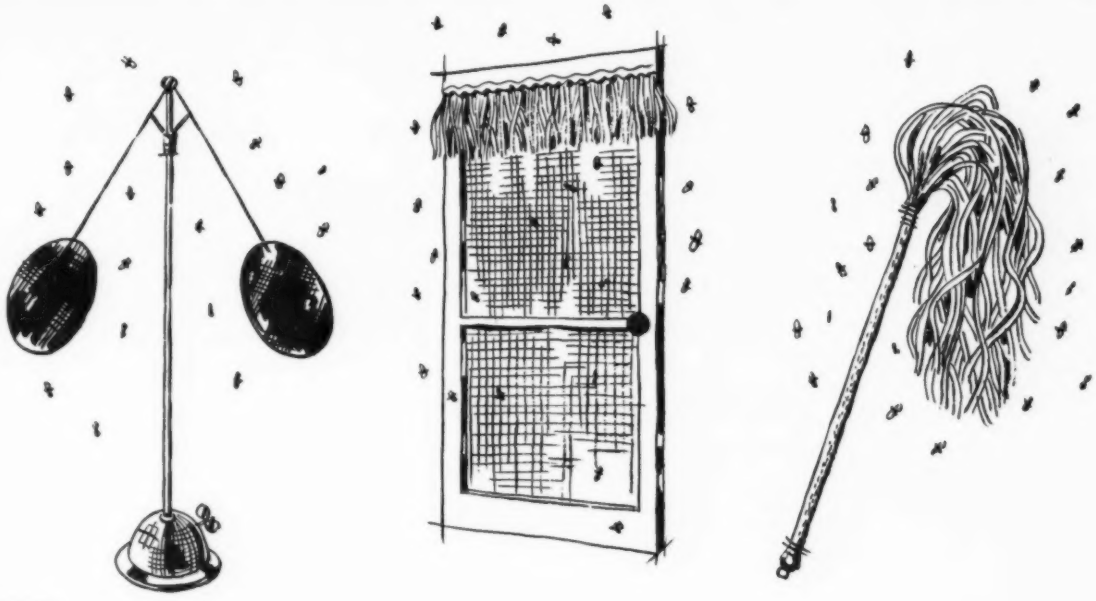
Latest booklet, "Du Pont Perfume Oils for Aerosol Products." Send for your copy today! Whatever the product . . . whatever the odor . . . Du Pont can satisfy your requirements. Write E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Aromatics Section, Wilmington 98, Delaware. Branch offices: Atlanta, Boston, Charlotte, Chicago, New York, Philadelphia, Providence, San Francisco.

DU PONT AROMATICS

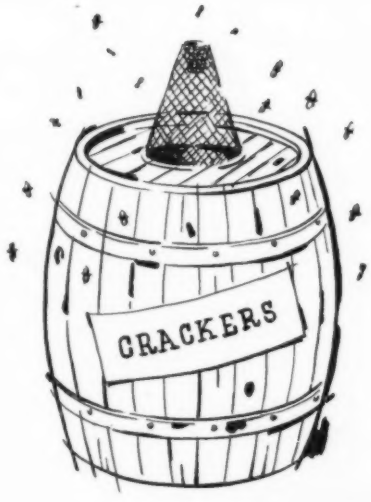
DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY



Remember 'way back when...



. . . these were popular gadgets for "chasing" flies? People settled just for shooing flies away, in those days. Today, a greater share of the world depends upon Velsicol chlordane for effective control of flies and a wide variety of other insect pests.

Proved in exhaustive laboratory and field tests, chlordane is highly effective as a larvacide when sprayed in fly-breeding places. For complete information on chlordane ease of application, and formulations in dusts, wettable powders or emulsified concentrates, write

CHLORDANE

VELSICOL "VELSICOL" CORPORATION

General Offices and Laboratories: 330 East Grand Avenue, Chicago 11, Illinois
Export Division: 100 East 42nd Street, New York, New York

REPRESENTATIVES IN PRINCIPAL CITIES

Ah!

MINT-O-PHENE

"CLEAN AS A MOUNTAIN BROOK"

The GERMICIDE With the Delightful MINT ODOR.

HEAVY DUTY DISINFECTANT

For efficient and safe disinfecting and deodorizing in the home, schools, clubs, hospitals.

POWERFUL GERMICIDAL ACTION

Destroys putrefactive bacteria usually causing foul odors. Economical dilutions.

DISEASE PREVENTATIVE

Excellent as a foot bath for prevention of Athlete's Foot.

DEODORANT SPRAY

If it is impractical to mop, Mint-O-Phene can be effectively used as a deodorant Spray.

BRILLIANT GREEN COLOR

Its cool green color and fragrant mint odor helps to make MINT-O-PHENE a winner in sales appeal.

COEFFICIENT 5, F.D.A. Method

SEND FOR LATEST PRICE LIST CONTAINING A WIDELY DIVERSIFIED LINE OF BAIRD & McGUIRE CERTIFIED PRODUCTS.

Baird's

THE ONE AND ONLY . . . .

Baird & McGuire, Inc.

HOLBROOK, MASSACHUSETTS

CREATORS AND COMPOUNDERS OF THE BEST IN CLEANERS AND DISINFECTANTS FOR OVER 42 YEARS

SANITARY PRODUCTS
A SECTION OF SOAP

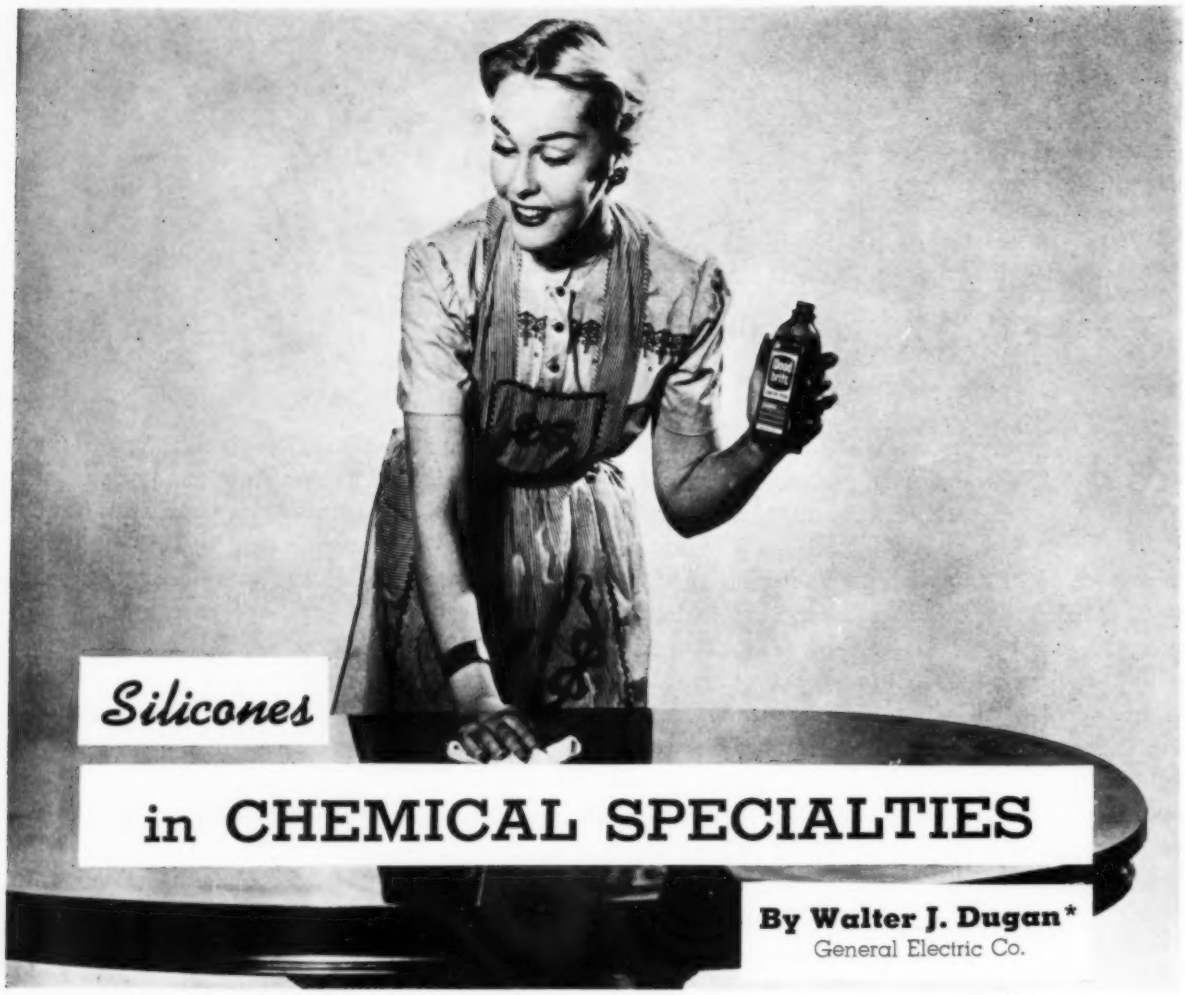
WILL sanitary supplies in the future be sold through local jobbers or direct by manufacturers? More and more of late, it would seem this question is being mulled over in private, but its open public discussion appears to be avoided like the plague. That loss of business over the past two years by manufacturers selling through the jobbing trade presents a serious problem to these firms is no secret. Growing competition, particularly from jobbers expanding into the manufacture of some of their own items, has brought a decline in sales of their own brands as well as private brands to many manufacturers. What can be done about it? What an be done to avoid hurting either manufacturers or jobbers?

The present path over which sanitary-janitor supply selling is traveling, in our opinion, heads in the direction of sharper competition, a keener fight for the consumer's dollar. Unless the industrial and institutional consumer spends more money for sanitary supplies, a smaller share may be the lot of each supplier. If more manufacturers who today are selling through jobbers are forced into direct selling—and we can observe some signs of this—the sanitary supply melon would have to be cut into a larger number of smaller pieces than at present. Obviously, the answer here is to increase the over-all sales of sanitary supplies which is the tack along which the National Sanitary Supply Association has been operating for several years past.

Because the average sanitary-janitor supply salesman carries a price book which may contain anything from 1,500 to 2,000 items, no further comment is needed on the character of the selling problem. How can a salesman with a line of this sort do any real selling, how can he "push" any particular item or items? And could this be the nub of most shortcomings in sanitary supply selling today? These and a number of other questions are being looked into by us at present. In the near-future, we hope to bring out our findings for wider discussion. We hazard a guess that they are going to show a need for an across-the-board increase in volume and better selling methods if a smaller split-up of the consumer's dollar is to be avoided.

CHEMICALS in cosmetics may be the next subject to come under the scope of the Delaney Committee which has been looking into the hazards of chemical insecticides and fungicides in foodstuffs production for some months past. Because of conflicting testimony received during the insecticide investigation by this congressional committee, we hear that the life of the committee will be extended so that cosmetics may be looked into. What connection, if any, outside of another congressional publicity stunt?

If the calibre of technical judgment of this committee in the insecticide investigations is a criterion, the real cosmetic and dermatological experts will be in for a tough time of it. True scientific qualifications and experience will receive no further consideration, we fear, than the misinformed drivel of those who win "reputations" by getting their names in the papers. If this committee goes ahead, we look for the same old farce all over again at public expense, only this time with cosmetics "on trial."



Silicones in CHEMICAL SPECIALTIES

By Walter J. Dugan*
General Electric Co.

THE use of silicones in automobile and furniture polishes is now well established. Such use has made possible the formulation of polishes having greater consumer appeal because they combine ease of application with high gloss and long lasting power. Polishes based on the silicones appeal to the manufacturer, too, because they make use of readily available domestic waxes, are relatively easy to manufacture and have excellent shelf life. The success of the silicones in these products has caused great interest among manufacturers of specialty products of many other types.

Broadly speaking the silicones are a class of polymers containing a plurality of silicon-oxygen-silicon linkages in contiguous array and in which the silicon atoms bear organic substituents, through carbon-silicon bonds.

The empirical formula of a silicone is generally represented as

$$R_N Si O_{\frac{4-N}{2}}$$

in which R is an organic radical. This organic radical may contain hydrogen, oxygen, sulfur, nitrogen, halogen or even silicon in addition to carbon, but in today's commercial products R is generally a simple alkyl or aryl grouping; for example, methyl or phenyl. These groupings have been chosen because they give the best combination of properties and because adequate methods are now available for their commercial production.

To the best of my knowledge all silicones manufactured today are derived by hydrolysis from intermediary silanes of the type

$$R_N Si X_{4-N}$$

Where R has the significance discussed earlier and X is a hydrolyzable grouping such as a halogen.

There are two general types of synthesis for organosilicon compounds: the substitution methods and the direct method. In the substitution methods, a silicon halide or ester is employed as the starting material, and the halogen atoms or ester groups are replaced successively by reaction with a suitable organometallic compound. The Grignard process is an example of this method. (See formula facing page.)

In the direct method, a hydrocarbon halide reacts directly with elementary silicon under favorable condi-

* Presented at 37th Midyear Meeting, C. S. M. A., Chicago, May 1 ,1951.

Substitution Synthesis of Organo-Silicone Compounds

$$SiCl_4 + CH_3MgCl \rightarrow CH_3SiCl_3 + MgCl_2$$
$$CH_3SiCl_3 + CH_3MgCl \rightarrow (CH_3)_2SiCl_2 + MgCl_2$$
$$(CH_3)_2SiCl_2 + CH_3MgCl \rightarrow (CH_3)_3SiCl + MgCl_2$$

tions to produce a mixture of organo-silicon halides.

$$CH_3Cl + Si \xrightarrow{Cu} \begin{cases} CH_3SiCl_3 \\ (CH_3)_2SiCl_2 \\ (CH_3)_3SiCl \end{cases}$$

It is desirable from the standpoint of flexibility of operation and variety of product types to have available intermediates of three functional types: R_3SiCl, R_2SiCl_2, and $R\,SiCl_3$ These yield siloxane units which are the building blocks of the polymers known as silicone fluids, resins, and elastomers.

Properties

THE basic properties which have made the silicones so valuable to industry may be listed under four main headings:

1. *Resistance to high and low* temperatures: Silicone fluids, can be used at temperatures as high as 400°F. and remain fluid at temperatures as low as —120°F. As pointed out previously, the silicone polymers consist essentially of silicon-oxygen-silicon linkages with organic groups attached to the silicon atoms. The structure of a dimethyl silicone polymer is as follows:

$$\begin{matrix} CH_3 \\ | \\ -Si-O \\ | \\ CH_3 \end{matrix} \left(\begin{matrix} CH_3 \\ | \\ -Si-O- \\ | \\ CH_3 \end{matrix} \right)_n \begin{matrix} CH_3 \\ | \\ -Si-O \\ | \\ CH_3 \end{matrix}$$

The resistance of the silicones to high temperature may be attributed to the thermal and oxidative stability of the silicon-carbon bond. Their flexibility or fluidity at low temperatures is probably associated with the flexibility of the silicon-oxygen-silicon bond angle.

2. *Outstanding release characteristics*: The silicones release rubber, metal and plastics from molds, and bread from baking pans and are useful in many other applications where sticking is a problem. Little can be said concerning this property from the theoretical viewpoint, although it is probably related to the unusual molecular structure of the silicones.

3. *Unusual surface characteristics*: The low surface tension of the silicone fluids is made use of in antifoam and antifloat applications, and the ability to render materials water repellent is made use of in treatments for synthetic fibers, ceramics and concrete and masonry.

4. *Inertness*: This is in part responsible for their high temperature stability and also makes possible the use of silicone rubber gaskets in chemical processing equipment and silicone rubber stoppers in medicine bottles.

Typical Applications

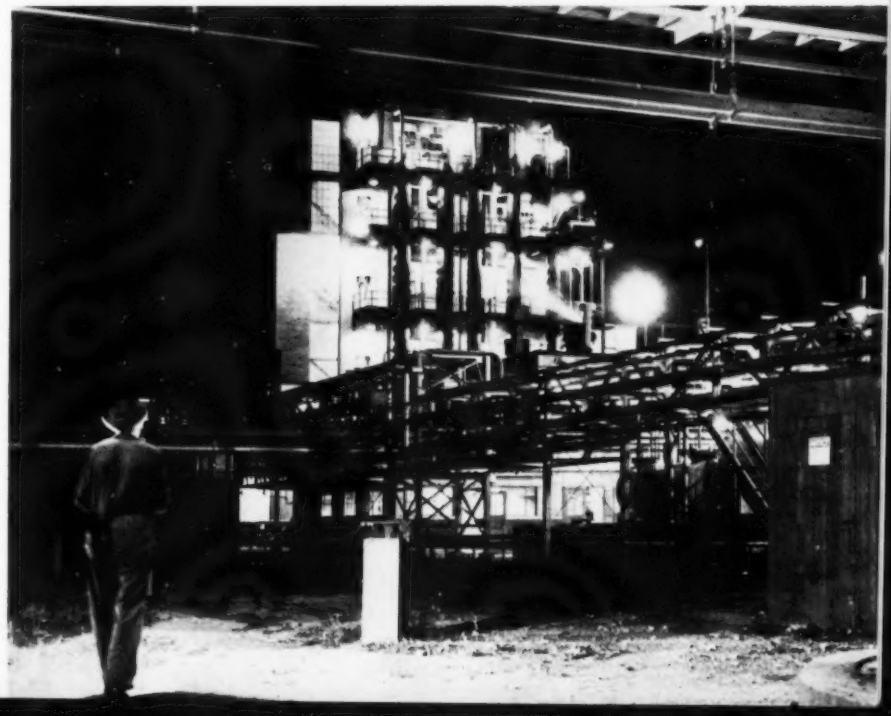
LET us now consider the forms in which these silicone polymers are available to industry and some of the ways in which the unique properties of these materials can be used to advantage by manufacturers of chemical specialties.

Silicone Resins

ALTHOUGH a few experimental dry resins have been made, the silicone resins are generally available only as solvent solutions. Depending upon the degree of reactivity of the resin and the application in which it is to be used, these solutions may contain as little as 15 or as high as 80% silicone resin solids. The original interest in the silicones in the United States was brought about by their great potential as electrical insulating materials. Now that silicone resins and rubbers with adequate physical properties are available, their use in such applications is advancing at a rapid rate. Their excellent electrical properties and their resistance to high temperature have made it necessary to establish a new class of electrical insulation. Silicone Class H insulation permits continuous operation of electrical equipment at temperatures 90 to 135°F. above the safe limit for Class B insulating materials and allows weight savings of 25-40% in such equipment.

The resistance of the silicone resins to decomposition at high temperatures is also proving of value in the formulation of industrial finishes. The use of silicone resins in aluminum base paints has made possible protective coatings which do not flake or deteriorate at 750°F. When higher temperatures are encountered, the silicone resin decomposes, but at a rate slow enough to permit bonding of the aluminum to the surface beneath it. While conventional aluminum will break down after

Home of General Electric Silicones, Waterford, N. Y., where G-E silicone oils, greases, resins, rubber, and water repellents are manufactured.



only a few hours at 1000°F., silicone-aluminum finishes show no breakdown after more than 1000 hours at this temperature.

The resistance of the silicone resins to chemical attack and their resistance to weathering should promote their use in protective coatings far superior to any now available. These resins show excellent resistance to boiling water, dilute acids, dilute alkali and to staining. Resistance to mineral oils and solvents is not as good as desired, but great effort is being expended in an effort to improve their resistance to these materials.

In Florida exposure tests the best alkyds chalk in four to six months, but properly formulated silicone enamels have shown very little chalking or loss of gloss after three years. These properties indicate that silicone and modified silicone enamels will find wide use in finishes for such items as ranges, refrigerators, washing machines, and automobiles and in protective coatings for such things as furnaces, smoke stacks and automobile exhaust manifolds.

Still another use for these resins that promises to become of increasing importance in the next few years is their use in waterproofing compounds for concrete and masonry. The incorporation of as little as 1% silicone resin in these materials provides a high degree of water repellency and increased life.

Silicone Elastomers

SILICONE rubber gum and compound are available to fabricators who convert these materials into silicone rubber gaskets, sheet stock, and many other forms. These rubbers are used primarily in high and low temperature gasketing applications and in electrical insulation. Silicone resins and rubber possess excellent electrical properties and are water repellent, but one of their greatest advantages lies in the fact that if they burn, they burn to SiO_2 which is non-conducting and allows the continuation of electrical services.

As do the other silicones, the rubbers have the ability to prevent things from sticking. This property is made use of in packaging and processing machinery; for example, silicone rubber covered sealer bars in heat sealing equipment prevent sticking and tearing, and silicone rubber covered rolls eliminate handling problems in the manufacture of adhesive backed tapes. The fact that these rubbers contain no plasticizers which can volatilize or be leached out, and the inertness of the rubber itself, has made possible the use of silicone rubber stoppers on medicine bottles and silicone rubber gaskets on chemical processing equipment.

These same properties have made possible their use in replacing damaged tubes within the human body and has aroused a great deal of interest among the medical profession. Several people in the United States are alive today only because of silicone rubber tubing in their bodies. In some cases, this tubing has already performed satisfactorily for five years.

In view of the non-adhesive characteristics of the silicones, an outstanding development in silicone rubber technology has been the production of adhesives. Silicone adhesives have been developed which bond metals, glass, ceramics, and other materials to themselves or to one another. These adhesives open up new horizons to the adhesive manufacturer because they remain stable and resilient after many hours of exposure at high temperatures, and because they will remain flexible when subjected to very low temperatures. Other types of silicone adhesives are available for bonding silicone rubber or compound to glass, metals or to itself.

Silicone Fluids

SILICONE fluids are available as the 100 per cent silicone polymer, as oil in water emulsions containing 35 per cent silicone, as greases, and as dielectric and antifoam compounds. Viscosities ranging from 40-1000 centistokes are available as standard materials, and oils having viscosities as high as several hundred thousand centistokes can be produced. Up to this time the fluids have been of greatest interest to manufacturers of chemical specialties.

The low surface tension and unusual surface properties of the silicones have been used to advantage in lacquers and enamels for some time. Incorporation of as few as one to 100 parts of a low viscosity silicones oil per million parts of the coating material will eliminate flow lines, silking and orange peel.

Silicone antifoam agents are currently being used to increase kettle capacity during processing, reduce foaming and bumping during distillation and to reduce foaming during packaging of many items.

Silicone treated tissues are widely used as glass cleaners both industry-wise and by the consumer market.

By far the greatest use of silicones in consumer items to date has been in waxes and polishes for glass, automobiles, and furniture. In these products many of the properties of the silicones contribute to their efficiency and explain their wide acceptance. Their low surface tension allows them to spread readily and evenly and their inertness and incompatibility allows them to lubricate but not plasticize waxes, thereby providing greater ease of rub-out without the use of softer waxes. In addition, their gloss producing ability has provided greater luster and their release properties have reduced the tendency for materials to stick to these surfaces.

It should be emphasized, however, that the mere addition of silicone to an existing formulation, even of the best type, will almost certainly not result in an outstanding product. The inclusion of silicone in a polish or in any other product does not imply that this item is of unquestionably high merit. There are many other essentials. Of particular interest and importance is the fact that the most successful of the new polishes are based on entirely new concepts of polish formulation.

These polishes have been specifically designed to take advantage of the unusual properties of the silicones and have been instrumental in pointing out to manufacturers the fact that because, in the silicones, they are dealing with an entirely new type of material they need not be restricted to what has been done in the past. On the contrary they are free to develop prod-

(*Turn to Page* 137)

N.S.S.A. Meets, Elects Ridge

CONTINUED emphasis on sales and sales training was reflected in the meeting program of the 28th annual meeting and trade show of the National Sanitary Supply Association, held at the Public Auditorium, Cleveland, June 3-6. Other highlights of the meeting, at which Searcy Ridge, head of Gateway Chemical Co., Kansas City, Mo., a distributor member, was elected president, were a question and answer panel on government price and material regulations, a distributor problem forum and an address on sanitation by Dr. E. B. Buchanan, Commissioner of the Cleveland Department of Health.

The association unanimously voted to amend that section of its constitution and by-laws dealing with the qualifications for active membership in the N.S.S.A. When the question of amending the constitution was discussed at the 1950 annual meeting, considerable opposition was raised to the provision that the applicant maintain an inventory in excess of $2500 for a period of 12 months prior to joining the association. In its newly adopted form no specific amount of inventory is set.

The number of firms exhibiting at the trade show was listed in the program as approximately 131, about the same number as last year, while attendance seemed to be slightly under last year's total. A few new products made their appearance in the Exhibit Hall at the show, while others were reported being unveiled in hotel quarters, reflecting existing shortages of materials and government regulations.

For 1952, the meeting of the National Sanitary Supply Association returns to Chicago where it has been staged for the past several years. Dates for the 29th annual meeting are March 23, 24, 25 and 26, 1952 and the place is the Hotel Stevens, scene of the very successful 1950 affair.

New officers and directors elected at the Cleveland meeting, in addition to Searcy Ridge, who succeeds Al Candy, Jr., of Candy & Co., Chicago, as president, are vice-president, John Walsh of Tesco Chemicals, Inc., Atlanta; secretary, Philip Shore, Shore Metal Products Co., Los Angeles;

First Meeting of New Officers and Board of N.S.S.A. June 5

Present when photograph above was taken were: Standing, left to right, Herbert J. L. Baum, Mipro Metal Products Co., San Francisco; W. K. Fawcett, Guardian Chemical Co., Atlanta; Bernard R. Freudenthal, Chemical Service of Baltimore; Philip Shore, Shore Metal Products Co., Los Angeles; James H. Wheeler, Sr., Essential Chemicals Co., Milwaukee; Malcolm Zucker, State Chemical Co., Cleveland. Seated, left to right, John F. Walsh, Tesco Chemicals, Inc., Atlanta; Searcy Ridge, Gateway Chemical Co., Kansas City; Leo J. Kelly, executive vice-president, N.S.S.A., and Al Candy, Jr., Candy & Co., Chicago.

eastern regional vice-president, Samuel C. Newman of Creco Co., Long Island City, N. Y.; southern regional vice-president, William K. Fawcett, Guardian Chemical Co., Atlanta; western regional vice-president, Herbert J. Baum, Mipro Metal Products Co., San Francisco; director, Malcolm Zucker, State Chemical Manufacturing Co., Cleveland; William A. Tucker, Moellering Supply Co., Fort Wayne, Ind.

Continuing to serve are Walter O. Krebs of American Standard Mfg. Co., Chicago, treasurer; Sidney P. Solomonson, Jr., Dixie Disinfecting Co., Dallas, southwestern regional vice-president; and James H. Wheeler, Sr., of Essential Chemicals Co., Milwaukee, central regional vice-president. Directors whose terms extend for another year are: Bernard R. Freudenthal of Chemical Service of Baltimore, Baltimore; and Guy P. Robbins, George B. Robbins Disinfectant Co., Cambridge, Mass. Al Candy, Jr., as retiring president, serves as a director.

Farnsworth W. Reckerd of the Syracuse supply firm bearing his name was awarded $100 at the luncheon on June 4, being the 25th person to shake hands with and greet "Mr. X," who was Searcy Ridge. Winner of the $100 on June 5 was R. R. Moulder of Moulder-Oldham Co., Tulsa, Okla. He was lucky enough to be the 25th person to greet Guy P. Robbins of George B. Robbins Disinfectant Co., Cambridge, Mass., "Mr. X" for the day.

The annual meeting of the association opened following a "sell-out" luncheon in the ballroom of the auditorium on June 4. The trade show and merchandise exhibit opened at 10:00 a.m. the previous day, remaining open until 7:00 p.m. It reopened at 10:00 a.m. June 4, closing at 12:30 p.m. for the luncheon and business session, which lasted until approximately 4:30 p.m. The meeting was convened officially by Al Candy, Jr., N.S.S.A. president. Capt. P. J. Hoffman of the Salvation Army pronounced the benediction. The first feature of the session was the awarding of the $100 to Farnsworth W. Reckerd. This was followed by the reading of the president's address by Mr. Candy. In it, he pointed out how the conventions and trade shows had grown over the past few years. Six years ago the association's trade show exhibits occupied one room of a hotel, he said. Last year, at what is thought to be the largest gathering of the N.S.S.A., manufacturers' booths filled the exhibit hall of the Hotel Stevens in Chicago, the largest such space of its kind. This year, Mr. Candy declared, the exhibits nearly filled the large exhibit hall of the Cleveland Auditorium. "There seems to be no end to the growth and expansion of the organization," he declared, adding that the organization now has almost 1,000 manufacturer and distributor members. He also cited the role of the industry in the prevention of disease. He paid tribute to the work of Leo J. Kelly, executive vice-president of the association, its only full-time executive, and his son, Bernard Kelly.

In his report as executive vice-president, Leo J. Kelly, the next speaker, reviewed the accomplishments and activities of the N.S.S.A. in the past year. He pointed out that the sanitary products industry is becoming known better to government officials, who he feels, will grant it equitable treatment in allocation of vital raw materials. He also announced that because of the growth of the organization and the added functions it must perform as a result of the emergency situation in which the U. S. now finds itself, the association has moved its headquarters to larger offices at its present location at 139 N. Clark St., Chicago. The new quarters, in suite number 1105, were to be occupied by July 5. Mr. Kelly asked the membership to consider increasing the size of the association's office staff to handle the expanded work load. He reported on local meetings of sanitary supply groups in various cities of the U. S. and indicated that in the coming year it was planned to hold meetings in places where they have not been held previously. Mr. Kelly also read the letter to various government agencies that was sent out by the association with the survey of the industry and its needs. A very favorable reaction to the letter was received, he said. He also mentioned the N.S.S.A. "Survey and Sell" booklet, as well as project devoted to recruiting and training of salesmen.

Searcy Ridge, in his report as vice-president, stated that "In the 28 years I have been in this business I have seen it develop from what was called a 'racket' to virtually a profession. . . . " He paid tribute to the officers and directors of the associaion and to its manufacturing members for making this possible. He warned that the industry "must continue to improve," and added that he expected "greater advancement in the next 10 years than in the past thirty. "We distributors are going to demand better products for our customers (and are) going to demand proof that our prod-

Part of the exhibit hall showing N.S.S.A. exhibits in the Cleveland Municipal Auditorium, scene of the 28th meeting.

New N. S. S. A. Officers and Directors

Searcy Ridge, President

John Walsh, Vice-Pres.

Philip Shore, Sec'y

H. J. L. Baum, West V. P.

W. K. Fawcett, South V. P.

Samuel Newman, East V. P.

W. A. Tucker, Director

Malcolm Zucker, Director

ucts will solve our customers' problems. We know our customers will pay us a legitimate profit for our services. They are willing to pay any price we ask if we can show them that they are getting their money's worth," Mr. Ridge declared.

Walter O. Krebs of American Standard Manufacturing Co., Chicago, N.S.S.A. treasurer, reported the association had a net worth of $81,324 as of May 15, 1951, the largest in the history of the organization.

Lacy E. Crain, N.S.S.A. secretary, reported briefly, listing the meetings held by the board of directors during the past 12 months. These included a meeting May 15, 1950 in Chicago, one in Boston on Nov. 20, 1950, and another in Cleveland, June 2, 1951.

Regional vice-presidents of the association were then introduced, following which a nominating committee, composed of the following members, was announced by Mr. Candy: Jack Varley of James Varley & Sons, St. Louis, chairman; William A. Tucker of Moellering Supply Co., Fort Wayne, Ind.; Jack Doyle, Doyle Vacuum Cleaner Co., Grand Rapids, Mich.; Norman Rothfield of Ramrod Chemi-

when it
smells better...
it sells
better!
INSECT KILLER
AEROSOMES
KEREX
RE-ODORANTS
First choice for pleasantly perfuming bulk and hand spray insecticides at a cost of...
LESS THAN 2¢ PER GAL.
FELTON
Quality

cal Co., Chicago, and Henry Hunter of Hunter Co., San Antonio, Tex.

The Bettger film on selling, was shown next, preceding the discussion of and unanimous voting on the new amendment to the constitution and by-laws of the association. As voted and passed Article XIV, Sections 1 and 2, now reads:

"Active membership in the association shall be open to any individual, partnership or corporation engaged in distributing and/or manufacturing sanitary or janitor supplies, provided: That such individual, partnership, or corporation shall maintain a regularly established place of business, shall have been actively engaged in the business under the same firm name for a period of 12 months immediately prior to application for membership, shall furnish as credit references the names of three firms which are at the time of application for membership shipping to the applicant firm on open account, and shall have in the course of the business built for itself a reputation for fair and reliable dealing; and provided further: That applicant shall have membership application endorsed by four sponsors, two of the sponsors to be manufacturing members of the National Sanitary Supply Association and two of whom shall be distributor members of the National Sanitary Supply Association. It is further requisite to active membership that the distributor applicant for membership shall subscribe to the constitution, by-laws and code of ethics of the association."

The final feature of the June 4 session was a report on the activities of Sanitary and Maintenance Suppliers of Northern California. Although the group, which was formed shortly after the end of World War II, operated independently of the National Sanitary Supply Association, in December of 1950 it voted unanimously to become part of the N.S.S.A. Part of the dues paid to the coast organization are remitted to the N.S.S.A., so that members of Sanitary and Maintenance Suppliers of Northern California become members of the N.S.S.A. automatically. The group has 11 dinner meetings a year, the cost of which is covered by dues, and last year held a dinner dance. Guests are invited to meetings, the cost of which is paid by the member host. The group has 44 members and is currently undertaking a drive to increase the number. Representing the group at the N.S.S.A. meeting and reporting on the successful way in which the organization has developed were S. S. Hockwald, president of Hockwald Chemical Co., San Francisco, a past regional director of the N.S.S.A., Ferd Lachman of Paul Koss Supply Co., San Francisco, a past president of the coast group and Herbert J. L. Baum of Mipro Metal Products Co., San Francisco. Last fall a West Coast Regional Convention, sponsored by the Sanitary and Maintenance Suppliers of Northern California, was held in conjunction with the local Los Angeles group and other western firms. Over 100 persons attended, and the N.S.S.A. was represented by Leo J. Kelly.

The general meeting following the group luncheon in the ballroom on June 5, presided over by Mr. Candy, opened with the "Mr. X" award of $100 to E. R. Moulder of Moulder-Oldham Co., Tulsa, Okla.

The report of the nominating committee was presented next by Jack Varley, chairman.

Representatives of the Office of Price Stabilization and the National Production Authority in Cleveland discussed price and materials controls in a question and answer forum. In this session, John P. Kishler of NPA reviewed the background of the establishment of NPA. He explained the operation of DO (Defense Order) ratings and their application to such scarce materials as rubber, steel, copper, aluminum, etc. He said that while DO97 is being used currently, it will be replaced by the CMP (Controlled Materials Plan) shortly. In discussing the future outlook for scarce materials, Mr. Kishler stated that now the military is spending about one billion dollars a week, and this will be doubled shortly.

H. P. Sharer of U. S. Rubber Co., New York, the next speaker, discussed ways to increase sales effectiveness.

The problem of direct selling by manufacturers and methods of pricing were covered in a forum on problems facing the distributor. Guy P. Robbins in explaining how to figure a profit, illustrated his talk with charts of mops, disinfectants and fiber drums. His firm works on a 10 percent profit, he said, although on some paper items

(*Turn to Page* 149)

A partial view of the group attending the banquet at the 28th NSSA meeting.

Detecting Wax Additives

Possible methods for detecting additives in vegetable waxes are discussed. The technique of solvent leaching, followed by specific tests on extracted residue, seems best on the basis of simplicity and usefulness.

By Charles J. Marsel,[1] Cyril S. Treacy,[2] Rino L. Godino[1]

THE problem of detecting additives in vegetable waxes is a most important one; however, little information concerning such techniques is available in the literature. Accordingly, the department of chemical engineering of New York University, in collaboration with Mamaroneck (N. Y.) Chemical Corp., recently undertook a long range fundamental investigation of this problem. Progress to date has been sufficiently encouraging to warrant presentation of this paper as an interim progress report.

An examination of possible analytical techniques indicated that the following had promise for detection of additives:

1. Changes in the normal physical and chemical properties of the wax.
2. Instrumental examination of the wax.
   a. Infrared absorption.
   b. X-ray diffraction.
3. Spot-testing with chemical reagents.
4. Separation techniques.
   a. Molecular distillation.
   b. Chromatographic adsorption.
   c. Adduct formation.
   d. Solvent leaching.

The ideal analytical technique would have these attributes:

Simple to perform; rapid; uses readily available equipment; specific for identifying additives; quantitative.

It is obvious that no one technique will be ideal; what was sought was a combination of techniques having a maximum of desired attributes.

Possible Techniques

ONE of the simplest methods would be detection through changes in the readily determined physical and chemical properties, as saponification number, acid number, melting point, flash point or iodine number. The limitation upon this method is the normal variation in properties between samples of a naturally occurring product such as vegetable waxes. Table I indicates the extent of such variations for a group of 26 samples of North Country No. 3 and Fatty Grey Carnauba waxes. These samples were part of a group of imported representative carnauba waxes; they may be presumed to represent pure natural waxes.

Thus, referring to Table I, it can be seen that the variations in the natural properties could tolerate a considerable amount of additive. For example, taking the two extremes of saponification numbers of 73 and 84, a sample of 100 parts of sap. no. 84 could have 15 parts of an inert material (12.5%) added, and still not exceed the lower limit of sap. no. 73. Similarly, the sample of sap. no. 73 could have 9.2% of hydrogenated castor oil of sap. no. 193 and be within the upper limit of sap. no. 84. Melting point and flash point are not sufficiently sensitive to detect other than gross sophistication. Unfortunately, these figures represent the range of additions in which one is particularly interested. Therefore, it is obvious that a more sensitive test must be used.

Instrumental analysis has received much attention in recent years. Infrared absorption has proved to be useful in vegetable oil analysis. Results in this laboratory indicate its use to be quite promising in wax analysis; results will be reported at a later date. X-ray diffraction has been used to identify acid and paraffin components of candelilla wax (1). These methods require special instruments and skills, however.

Spot tests for indicating the presence of certain specific additives would be quite useful. For example, the plastics industry has suggested that phenolic resins could be identified by decomposing the resin by heat to liberate free phenol, and testing for the phenol by a sensitive color indicator (2). Accordingly, some tests were made on a sample of carnauba wax containing six per cent of a phenolic-type resin. The wax was heated and then extracted with boiling water to remove phenol. The color tests for phenol were:

TABLE I

Variation in Properties of a Group of 26 Representative North Country No. 3 and Fatty Gray Carnauba Waxes

Saponification[1] *Number*	*Acid*[1] *Number*	*Melting Point, °C*	*Flash Point, °F*	*Iodine*[1] *Number*
73-84	2.80—	83.3—	520—	8.5—
	5.40	86.0	605	10.7

[1] Reported on a dirt and water free basis.

[1] Department of Chemical Engineering, New York University, New York 53, N. Y.
[2] Mamaroneck Chemical Corporation, Mamaroneck, N. Y.

* Paper presented before 37th midyear meeting, C.S.M.A., Chicago, April 30, 1951.

TABLE IIA

Variation of Time in Extraction of Samples (Pure Carnauba-Fatty Grey)

	Sample gms.	*Residue from $CHCl_3$ Extraction gms.*	*Acid Number of Residue*	*Acid Equivalents*[1]
Extraction 2 hours Ice Bath 2 hours	10.015	0.810	14.2	11.5
Extraction 2 hours Ice Bath ½ hour	10.011	0.865	13.4	11.6
Extraction 3 hours Ice Bath 1 hour	10.000	1.036	10.4	10.8
Extraction 1 hour Ice Bath 1 hour	10.005	0.798	13.0	10.4

TABLE IIB

Variation of Time in Extraction of Samples (5% Durez with Carnauba)

	Sample gms.	*Residue from $CHCl_3$ Extraction gms.*	*Acid Number of Residue*	*Acid Equivalents*	*% Durez Extracted As Calculated*
Extraction 3 hours Ice Bath 1 hour	10.006	1.369	31.7	43.4	93%
Extraction 1 hour Ice Bath 1 hour	10.017	1.271	32.1	39.2	82%

[1] Obtained by multiplying acid number of residue times weight of residue.

Note 1—An alternate technique for obtaining a finely divided form of the wax by precipitation from solvent solution is described later. At the present time the above method is preferred because of the filtration difficulties encountered if the wax is occasionally obtained in a too finely divided or gelatinized form by the precipitation technique.

Note 2—This is an optional step. It was carried out in this experimental work because of its relative simplicity and because of the very low solubility of carnauba in chloroform at ice temperature.

Ferric chloride—one per cent ferric chloride solution was added to a small portion of the test solution. The test should give a blue-violet color which changes to yellow upon addition of HCl.

Gibbs' Test—three drops of a suspension of 2,6 — dibromoquinone chlorimide added to a portion of the test solution which had been adjusted to a pH of 9 with NaOH. A blue color should result.

Mercuric Nitrate—three drops of a solution of mercuric nitrate (one part Hg, one part HNO_3, two parts of water) added to a small portion of the test solution. A deep red color should result.

Of these three, the Gibbs'test was the only one which could be used. It was satisfactory only if used on an extracted portion of the sample (see later discussion). In general, color tests, although simple and quick, are prone to interference and cannot be depended upon completely.

It may be concluded, therefore, that since none of the methods discussed so far is completely satisfactory, recourse must be had to some separation technique for separating relatively small amounts of additives from the wax, where it can be analyzed more readily.

Ordinary vacuum distillation is not satisfactory for the high molecular weight compounds encountered in wax mixtures, but a molecular distillation would separate many mixtures satisfactorily. This would require an expensive molecular still, and would be time-consuming.

Chromatographic adsorption seems to be a much more promising separation means. Thus, for example, Schuette and Baldinus (1) by passage of a petroleum ether solution of candelilla wax through a 14-inch column of activated alumina were able to separate the paraffins from the remainder of the mixture. Carnauba wax is not as susceptible to this treatment because of lower solubility. It would appear that the method could be adopted for certain specialized separations.

Certain components might be separated by the formation of addition compounds or complexes called adducts. Thus, for example, the use of ureau adducts has given interesting separations from petroleum mixtures.

A very promising method of separation is by solvent extraction, or, as the term more properly applied to extractions by a liquid from a solid phase, solvent leaching. Of considerable value here is the rather low solubility of vegetable waxes as carnauba in most solvents at room temperature.

For example, at 25°C, using benzene as a solvent, the following solubilities are reported (3), in grams of wax/100 ml. of solvent:

Carnauba	0.518
Paraffin (m.pt. 55°C)	12.00

Thus, if a 10 gram sample of wax containing 0.5 grams of paraffin were leached with 100 ml. of benzene at 25° C., and the solvent then evaporated, one would have a residue of approximately one gram containing about equal quantities of carnauba and paraffin. It is obviously much easier to test for the paraffin in this enriched mixture. In this way one may obtain an additive-enriched residue by leaching similar mixtures containing other components. The actual residues vary slightly from the example cited, because certain minor components of the carnauba are preferentially extracted, and the various components may affect their mutual solubilities, but the overall result is as stated.

The best solvent to use is one which has maximum solubility for a wide range of possible additives and minimum solubility for the vegetable waxes. Of a large number of solvents tested, chloroform, carbon tetrachloride and toluene were the best. Chloroform was finally selected as the solvent for the general experimental work. After obtaining an additive-enriched residue,

13. **Cadelle** — One of best known of stored grain pests in the U. S. Adults are long, flat, black beetles, about ⅛" long. Many live for over a year. Females lay about 1,000 eggs each, which hatch in from 7 to 10 days.

14. **Little Black Ant** — Small, slender, shiny, jet black ants, about 1/12" to 1/10" long. Usually nest out of doors. Very common pest, feeding on many food products, including sweets, fruits, vegetables, and meats.

SABOTEURS
in the food industry

The members of this rogue's gallery are all convicted saboteurs. They've stolen valuable food products, hampered the efficiency of workers, contaminated food – just played havoc in general throughout the food industry. But their careers of crime will come to a swift close when they come in contact with *Pyrenone-based insecticides.*

Insecticides based on versatile Pyrenones kill these and many other food insects. They're available as oil-type, emulsion, or wettable powder sprays . . . as aerosols . . . and in many specialty formulations. By protecting precious food and food products against costly insect damage, Pyrenone-based insecticides are doing their bit for national defense.

This is the third ad in a series. We'll be glad to send you reprints of this ad or the preceding ones. Just write U.S. Industrial Chemicals, Inc., 60 East 42nd Street, New York 17, New York. Branches in all principal cities. In Canada: Natural Products Corporation, 738 Marin Ave., Montreal, Canada

Pyrenone®

*Reg. U.S. Pat. Off.

15. **Rust-Red Flour Beetle** — Second in importance only to Confused Flour Beetle as pest of milled cereal products. Looks like Confused Flour Beetle, except for antennae. Is stronger flier, found more often in farm-stored grain.

16. **Cheese Skipper** — Adults are small, rather shiny, two-winged flies, about 1/6" long. Maggots jump by bending bodies and then suddenly straightening them. Life cycle is about 18 days. Feed on cheese and smoked, cured meats.

17. **Scorpion** — Famous for their stings. Long stinger is carried at tip of abdomen. Scorpion has 4 pairs of walking legs and a pair of pinchers for grasping prey. Capable of causing painful wound to man.

specific tests may be developed to detect individual components.

Leaching Technique

AN accurately weighed sample of about 10. grams of vegetable wax is finely pulverized with mortar and pestle, (see note 1) and placed in a 250 ml. Erlenmeyer flask with 100 ml. of chloroform. The sample is agitated with an electric stirrer for two hours at 25° C. Then the flask is immersed in an ice bath (see note 2) for one hour with occasional manual stirring. The sample is then filtered and the solvent evaporated from the filtrate. A vacuum oven was used near the end of the evaporation to remove last traces of solvent and prevent charring. The residue is accurately weighed.

Table IIA and IIB indicate the effect of varying time on the extraction and cooling steps in the procedure. It is interesting that increased time of extraction gives larger residues, whereas increased time of cooling has little effect. However, the increased time of extraction has little effect on the total number of acid equivalents extracted; the significance of this will be seen later. Table IIB indicates the extent of Durez extraction—93% with a three hour extraction.

One of the essential facts to be established is the natural variation in the weight of residue from extraction of a series of representative samples of a natural wax. Table IIIA shows this for a group of N.C. No. 3 and fatty grey carnauba waxes, with average values as indicated. Table IIIB indicates similar data for ouricuri wax. Based upon eight samples of carnauba, it is seen that there is a maximum 20 percent variation from the average for the weight of extracted residue. It was felt that this provided a sufficiently sound basis for further experimental work with a group of controlled samples.

Controlled Samples

A GROUP of control samples was prepared from a basic sample of No. 3 pure crude carnauba wax, (Mamaroneck Chem. Corp.), acid no. 3.8, sap. no. 84. A series of possible wax additives or extenders was selected, and a number of individual samples containing five percent of additive added to the above wax were prepared. The compounds added, consisting mostly of a variety of resins, were as follows, with a brief description:

The natural resins in general are chemically related to the terpenes or the essential oils. They are insoluble in water, more or less soluble in organic substances and glycerides. On heating the resins melt with the distillation of volatile oils terpenic in nature. The residue is termed "run" gum or resin and is usually of lower molecular weight than the original, hence more soluble and of lower melting point.

1. *Damar Singapore No. 1 Resin*—Low acid number resin of recent origin. Melts at 110° C.; is easily added in range 110-150° C.
2. *East India Batu*—Semi-fossil or semi-recent resin related to the Damars. Is compatible in the range 150-200° C. Tends to explode when heated, possibly due to contained moisture. Hard to handle.
3. *No. 1047 Fine Melted Pale Congo Resin*—This belongs to a class called the Copals, and is considered the hardest of the natural resins. This particular type is a "run" resin, which melts in the range 95-101° C. and is added easily.
4. *Durez No. 219*—This is a synthetic resin of the phenol-formaldehyde class which has been modified with terpene acids (probably abietic), accounting for its high acid number. Made by Durez Plastics and Chemicals, Inc., North Tonawanda, N. Y.
5. *Shanco No. 300*—Believed to be of the Durez No. 219 type, made by Shanco Plastics and Chemicals, Inc., Brooklyn, N. Y.
6. *Lewisol No. 20*—This is a "modified rosin ester especially developed for use as a wax modifier," and is made by the Hercules Powder Co. of Wilmington, Del.
7. *Piccolyte S-115*—This is one of a series of "pure hydrocarbon, thermoplastic, terpene resins." It is made by the Pennsylvania Industrial Chemical Corp., Clairton, Pa.
8. *Hydrofol Glycerides Code 200*—A hydrogenated castor oil, made by the Werner G. Smith Co., Cleveland.
9. *Dark Refined Candelilla.*
10. *Refined paraffin wax, m.pt. 150°F.*

Table IV indicates results of solubility studies on these materials. It was as a result of these studies that chloroform was selected as the solvent for further work.

Table V tabulates some chemical constants for the extenders, as

TABLE IIIA

Variation in Extraction Residues in a Series of N. C. No. 3 and Fatty Grey Carnauba Waxes

Sample gms.	*Residue from $CHCl_3$ Extraction gms.*	*Acid Number of Residue*	*Acid Equivalents*
10.054	0.808	13.5	10.9
10.009	0.661	15.4	10.2
10.014	0.531	13.9	7.4
10.012	0.581	11.8	6.9
10.009	0.952	15.9	15.1
10.040	0.964	14.2	13.7
10.008	0.835	13.0	10.9
10.041	1.051	9.3	9.7
	Av. 0.798 ± .155	13.4 ± 4	10.6 ± 6

TABLE IIIB

Variation in Extraction Residues for Ouricuri Wax

Sample gms.	*Residue from $CHCl_3$ Extraction gms.*	*Acid Number of Residue*	*Acid Equivalents*
10.0031	1.004	11.3	11.3
10.007	1.100	8.92	9.8

determined for this study. The constants were determined by methods developed earlier (1); for example, the solvent mixture isopropanol, n-amyl alcohol and toluene (8:1:1) was used in determining the saponification number of all samples except Damar Singapore, Piccolyte S-115 and Batu East India. The solvent used for these last named materials was a 50-50 mixture of ethanol and toluene.

It can be seen from Table V that many of the materials have an acid number very much higher than carnauba; if these extenders are extracted, such a fact can be used to detect and analyze for them. In the case of hydrogenated castor oil, for example, the high saponification number of 193 can be so used. Similarly other tests may be devised.

Table VI depicts the results of determining acid numbers of chloroform extracts of the series of extended carnauba wax samples mentioned earlier. It can be seen that in a number of cases, both the greater weight of the residue obtained, and the acid number of residue obtained, as compared to the values for normal carnauba, indicate the presence of resin. For example, the residue from the Durez extended sample contained 42.4 acid equivalents compared with 13 for pure Carnauba. Similarly, the residue from the Piccolyte S-115 extended sample was 1.20 grams compared to .86 grams for pure carnauba, clearly pointing up the presence of the Piccolyte, although not shown by the acid number. In the last column are given the percent resin in the sample as calculated, based on values from Table V. It will be noted that bleaching of the sample would interfere somewhat with the test unless this fact was known.

Table VII shows similar results for saponification numbers. It will be noted that glycerides such as hydrogenated castor oil could be easily detected by the high saponification number of the residue from chloroform extraction.

Table VIII, for iodine numbers, indicates that there is not enough variation in these values for it to be of any benefit. Any unsaturated material would show up here, of course.

It would be of great value in working on a residue by these methods to know beforehand what components are present. Tests are being conducted at present to ascertain the value of infrared absorption for preliminary identification of the chloroform extracts.

Other tests are in the process of development for special components. For example, it was desired to develop a more specific test for identification of paraffin wax in vegetable wax. Such a test is described, depending on the fact that paraffins in contrast to most organic materials are not attacked appreciably by concentrated sulfuric acid at room temperature. The extract from a solvent leaching of the vegetable wax (in this case ouricuri) is

(*Turn to Page* 135)

TABLE IV

Solubility of Extenders in Some Common Solvents

Components	$CHCl_3$ 25°C	$CHCl_3$ 0°C	*Toluene* 25° C	*Toluene* 0°C	*Acetone* 25°C	*Acetone* 0°C
Shanco #300	1	2	1	2	2	2
Damar Singapore	1	1	1	1	2	3
Lewisol	1	1	1	1	1	2
Piccolyte S-115	1	2	1	1	2	2
Batu East India	1	1	1	1	2	2
1047 Fine Melt Pale Congo	1	2	1	2	2	2
Hydrogenated Castor Oil	1	1	3	3	3	3
Durez #219	1	2	1	1	1	1
Candelilla	2	3	3	3	2	2
Pure Carnauba	3	3	3	3	4	4

Components	C_6H_6 25°C	C_6H_6* 0°C	CCl_4 25°C	CCl_4 0°C	*Ethyl Acetate* 25°C	*Ethyl Acetate* 25°C
Shanco #300	1	..	1	1	1	1
Damar Singapore	1	..	1	1	2	3
Lewisol	1	..	1	1	1	1
Piccolyte S-115	1	..	1	1	2	3
Batu East India	1	..	2	2	2	2
1047 Fine Melt Pale Congo	1	..	1	1	2	2
Hydrogenated Castor Oil	2	..	2	2	2	2
Durez #219	1	..	1	1	1	1
Candelilla	3	..	3	3	2	3
Pure Carnauba	3	..	3	3	2	3

* Benzene freezes at this temperature.

1 = Soluble
2 = Nearly all soluble
3 = Slightly soluble
4 = Not soluble

Tests made with 5 grams of extender to 25 cc. of solvent.

TABLE V

Chemical Constants of the Pure Materials

Pure Components	*Acid Number*	*Saponification Number*	*Iodine Number*
Shanco #300	54.6	110	11.9
Lewisol	43.1	182	16.4
Durez #219	70.0	110	...
Damar Singapore	32.0	28.2	17.0
Batu East India	15.0	83.2	...
Piccolyte S-115	4.00	4.00	13.2
1047 Fine Melt (Pale Congo)	77.0	108	28.5
Hydrogenated Castor Oil	2.85	193	...
Candelilla	12.0	70.0	11.7
Pure Carnauba	3.76	84.0	...
Bleached Carnauba	8.10	87.6	...

Role of Atmospheric Humidity in

Sterilization of Surfaces

By Edward W. Dunklin and William Lester, Jr., M.D.*
Department of Medicine, University of Chicago

IT has been the experience of those working in the field of air sterilization that the usual means of air sterilization, such as ultraviolet light and the glycols, always left a residual population of airborne microorganisms which was highly resistant to the bactericidal action of these agents. The source of this resistant population was soon found to be the dust on the floors, bedding and other surfaces in the natural environment. Very rapid increases in the bacterial count and flora of the air resulted from such activities as sweeping, dusting or bedmaking. Such studies have been able to correlate the degree of air contamination with the amount and kind of activity in a room. As a result of these findings, various dust-laying procedures, such as oiling of floors and bedding, have been employed with some measure of success. However, even under these conditions a high level of contamination of the environment was maintained. Because of the ineffectiveness of most techniques in sterilizing an inhabited environment, it has been very difficult to evaluate the significance of airborne bacteria in the epidemiology of infections of the upper respiratory tract. Too, in many cases it has been difficult to control post-operative infections because of the inability to destroy the organisms in the secondary reservoirs such as the surfaces in an operating theater.

In view of the fact that the organisms usually found in room dusts, when incubated in nutrient broth, could be attacked successfully, it was believed that the state of these dust-borne particles was different. Since the combined effects of humidity and glycols can successfully destroy most of the organisms freshly introduced into the air, the problem of environmental decontamination resolved into one of killing those dried organisms which eventually became a part of room dust.

Dr. E. G. Klarmann of Lehn and Fink Products Corp., approached our laboratory with a solution called "O-Syl" which he had found to be an effective surface disinfectant. His experience had been that surfaces washed with one per cent aqueous solutions of this material remained bactericidal for at least a week. Because of the interest of our laboratory in the combined effect of air and surface sterilization, we undertook an evaluation of "O-Syl" as a surface germicide.

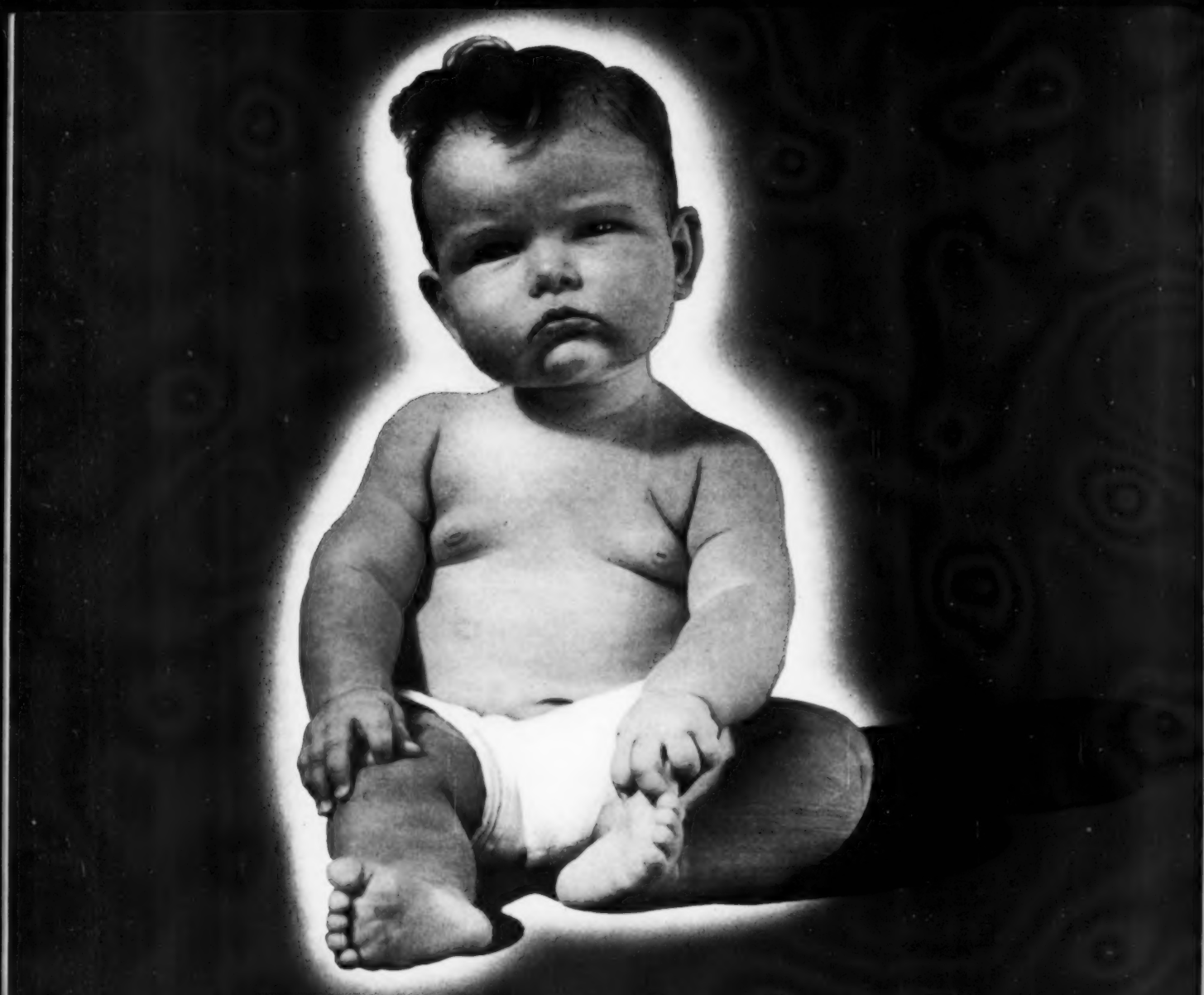
Materials and Methods

TWO types of dusts and powders were used in these studies (1) ordinary room dust collected from vacuum cleaners, floor sweepings and from dusty shelves and (2) the *pneumococcus* type I and *streptococcus hemolyticus*, Group C, spray-dried from "Difco" heart infusion broth. The surfaces employed were of glass made by cutting microscope slides in two. An equal number of test and control slides were used in each experiment. The test slides were coated with the germicide by immersing them in the "O-Syl" solution of the desired concentration and then air-drying them at a relative humidity of 10 to 20 per cent. When a five per cent "O-Syl" solution was used, 6.08×10^{-5} grams of dry residue per square centimeter of surface remained on the glass. The slides were inoculated with the dry dusts by dispersing the dusts into the air and allowing the particles to settle on the surface of the slides. For this purpose a small 60 liter chamber was used. The test and control slides were placed on a piece of cardboard and this, in turn, was placed on the floor of the chamber. Another piece of cardboard was placed on top of the slides and was rigged in such a way that it could be raised to uncover the slides at the end of spray. A small fan inside the chamber assured uniform mixing of the dust with the air. The dust was dispersed from a small Erlenmeyer flask by compressed air. After five minutes the air and the fan were turned off, the cover lifted from the slides and the dust allowed to settle for twenty minutes. At the end of the settling period the slides were immediately placed in constant humidity jars and stored at a temperature of 72 degrees Fahrenheit. Periodically slides were removed and sampled by carefully swabbing the surface with a sterile cotton swab. The swab was immersed in five cc. of sterile nutrient broth, shaken vigorously for five minutes and then aliquots plated in blood agar. The plates were counted after 48 hours incubation at 37 degrees centigrade. The slides were similarly shaken in broth and aliquots plated. Table 1 gives the uniformity of the inoculum on the slides. It can be seen that the average deviation from slide to slide is of the order of $\pm$ ten per cent.

Experimental

IN view of the fact that the relative humidity of the atmosphere would be a factor in the effectiveness of "O-Syl," we studied the rate of its bactericidal activity as a function of

* Before 37th midyear meeting, C.S.M.A., Chicago, April 30, 1951.



It takes a little thought...

to produce a perfume ideally suited to insecticides, air fresheners and detergents.

Send us a sample of your product, unperfumed,—we'll give it constructive thought and submit a sample, custom-built, to suit YOUR product, YOUR market, YOUR costs.

Proper perfuming improves product preference.

MANUFACTURERS AND CREATORS OF THE FINEST PERFUME MATERIALS

Van ameringen · haebler, inc.

521 WEST 57th STREET
NEW YORK 19, N. Y.

TABLE 1

Uniformity of Inoculum on Slides
Spray-dried pneumococci used

A Swab Counts	*Total in* Sample	*B* Plate Count	*Total in* Sample	*A + B*	*Mean*
		Control Slides			
418	1070	67	335	1405	
388	970	146	730	1700	1496 ± 145
455	1137	45	225	1362	
		Test Slides			
197	493	157	785	1288	
63	157	223	1115	1272	
306	765	57	285	1050	1169 ± 87
243	607	103	515	1122	
157	393	146	730	1123	

relative humidity. The organisms used in this study were of two kinds: *pneumococci* and *streptococci* spray dried from broth suspension and dust-borne organisms found in room dust obtained from floors, shelves, vacuum cleaners. These room dusts were used in their natural state, i.e., they were used as found except that they were put through a No. 200 sieve to remove large fibers.

Typical results with spray-dried organisms can be seen in Figure 1. The organism used here was the *pneumococcus*. These lines represent the rate of death of the organisms at the various relative humidities studied. As can be seen, the killing action does not become very pronounced until the relative humidity is increased beyond 33 per cent. It will be shown in Figure 5 that this killing is due to "O-Syl" and not to humidity alone. At humidities of 52 per cent or greater, complete sterility was obtained in less than one hour. It will be shown later that the control slides, i.e., those without "O-Syl," were not sterile in eight hours.

Since it appeared that "O-Syl" did show bactericidal activity, we decided to determine its effectiveness against dust-borne organisms. In these experiments, the bactericidal activity was determined as a function of concentration as well as relative humidity (Figure 2). The data were obtained at 75 per cent relative humidity. The type of curve shown here is typical of the data obtained in these studies. There is an initial rapid death rate, followed by a lower death rate. These data show that as the concentration increases the rate of death increases. Here we also see the pronounced effect of the "O-Syl." At zero per cent "O-Syl," the death rate is practically zero, whereas the use of a one per cent solution results in reducing the population by 90 per cent in less than 24 hours. The higher initial decline represents largely the death of bacteria

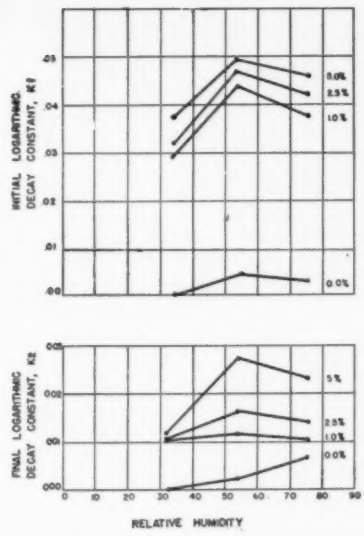


Figure 3. Slopes of the logarithmic survival curves of dust-borne organisms at various relative humidities and concentrations of "O-Syl." K_1 is the slope of the initial part of the survival curve, and K_2 is the logarithmic decay constant for the final portion of the curve.

whereas molds, primarily *aspergillus niger*, account largely for the lower death rate. These data are summarized in Figure 3 in which we have plotted the K* value (or slope of the logarithmic plot of the survivors) as a function of relative humidity. The experiments were run at relative humidities of 33 per cent, 52 per cent and 75 per cent. It can readily be seen that the bactericidal activity is a function of the concentration of "O-Syl" employed and of the relative humidity, the action being greatest at a concentration of five per cent "O-Syl" and

$$^{*}K = \frac{\log N_o - \log N_t}{t}$$

Figure 1. The effect of a one percent "O-Syl" solution on the survival of spray-dried pneumococci at various relative humidities.

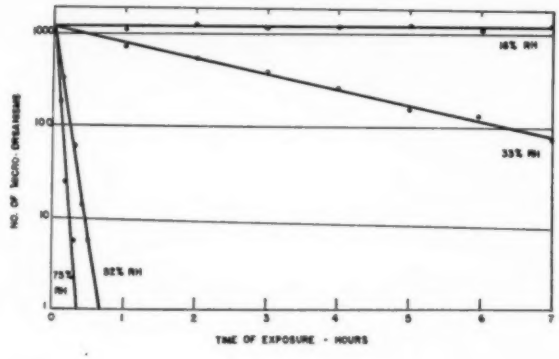
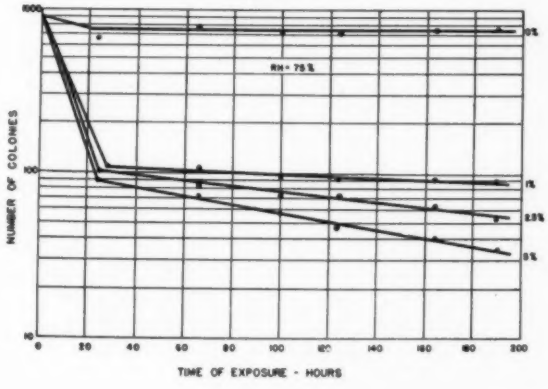


Figure 2. The effect of various concentrations of "O-Syl" on the survival of dust-borne organisms at a relative humidity of 75 percent.



By using only the original

QUATERNARY AMMONIUM GERMICIDE

GENUINE

Roccal

Reg U S Pat Off and Canada

BRAND

SANITIZING AGENT

In your compounds and formulations

Made under rigid laboratory controls that guarantee

POTENCY • UNIFORMITY • QUALITY

NOW OFFERED TO MANUFACTURERS IN 50% CONCENTRATION

Quaternaries are being used more and more as germicides and fungicides in widely diversified fields:

- Restaurants
- Taverns
- Soda Fountains
- Dairies
- Milk producers
- Poultry farms
- Food Processing plants
- Egg Breaking and Drying plants
- Refrigeration plants
- Frozen Food Packers
- Bakeries
- Fisheries
- Bathing places
- Barber Shops
- Beauty Salons
- Hospitals
- Laundries

Sample and literature on request

Sterwin Chemicals Inc.

SUBSIDIARY OF STERLING DRUG INC.

Distributor of the products formerly sold by Special Markets-Industrial Division of Winthrop-Stearns Inc., and Vanillin Division of General Drug Company

1450 BROADWAY, NEW YORK 18, N. Y.

52 per cent relative humidity. Also, the effect of the "O-Syl" is apparent immediately by the relative size of the logarithmic decoy constants compared with those of the control.

Now, since it was evident that "O-Syl" possessed a bactericidal activity against dust-borne organisms, we wondered whether, in a controlled environment in which glycols were being employed, the killing action of "O-Syl" might be enhanced by the presence of triethylene glycol with its hydroscopic properties. To determine the effect of TEG, the air of the chamber was saturated with triethylene glycol and the dust then sprayed into this atmosphere. After allowing this dust to settle, the slides were removed and placed in constant humidity jars. Since, in an environment employing triethylene glycol for air sterilization, the dust particles would always be in a glycol atmosphere, beakers containing aqueous glycol solutions of such concentration that they would be in equilibrium with the various humidities were placed in the jars. The jars were then evacuated to the partial pressure of water vapor corresponding to the desired relative humidity to speed up the rate of attaining equilibrium. In these experiments (Figure 4) molds and bacteria were counted separately. It is evident that the presence of triethylene glycol enhances the action of "O-Syl." The K value has been increased more than three-fold. That this increased killing action is due largely to the wetting properties of glycol rather than to its bactericidal properties is indicated by the fact that the death rate of the control is not very much higher than that previously obtained without the glycol. The curves also show clearly that the bacteria are killed at twice the rate of the molds. We can also see that presence of the glycol lowers the effective relative humidity to 20 per cent or below by virtue of the fact that the K value obtained with glycol at a relative humidity of 20 per cent is about three times that obtained at 33 per cent without glycol. It is significant to note also that K_2 with glycol is almost as great as K1 without glycol.

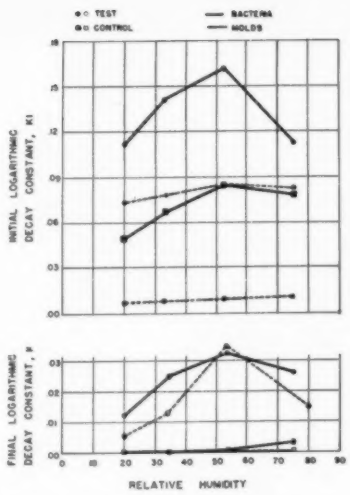


Figure 4. Slopes of the logarithmic survival curves for dust-borne organisms at various relative humidities and a saturated triethylene glycol atmosphere. Five percent "O-Syl" used. Molds and bacteria were counted separately.

The shape of the curves raises some interesting questions about the mechanism of action of "O-Syl." In view of the fact that a maximum killing action was obtained in the region of 50 per cent relative humidity, it would seem that two distinct mechanisms were operating to account for the killing action of O-phenylphenol increasing to a maximum and then declining with increasing relative humidity. One would have to suppose that O-phenylphenol was suddenly diluted out beyond effectiveness. This is very unlikely in view of the fact that the solution formed by the adsorption of water molecules from the air by the residue on the slide surfaces would be considerably more concentrated than the undiluted "O-Syl." Because of the similarity between the shape of these curves and those obtained in a study of the lethal effect of relative humidity on air-borne micro-organisms, it seemed more likely that the appearance of a maximum in the curve was due to lethal effect of humidity alone. However, for this lethal effect to become apparent, water must penetrate and wet the dust. If this is true, then the use of potassium ricinoleate alone should give a curve showing a maximum of about 50 per cent relative humidity. The capacity of the soap to lower surface tension should allow the dust-borne organism to be wetted by the atmospheric humidity. Too, if the other constituents of

Figure 5. The effect of o-phenylphenol alone on the survival of spray-dried pneumococci at various relative humidities.

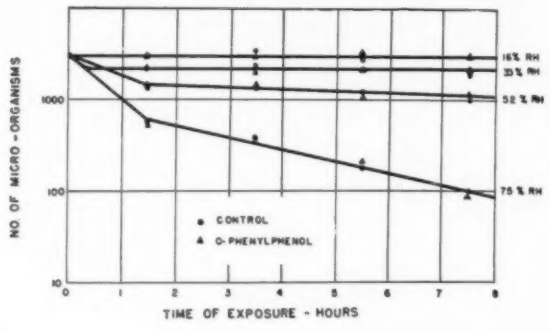
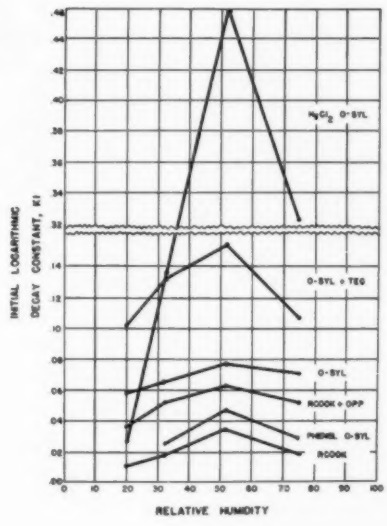
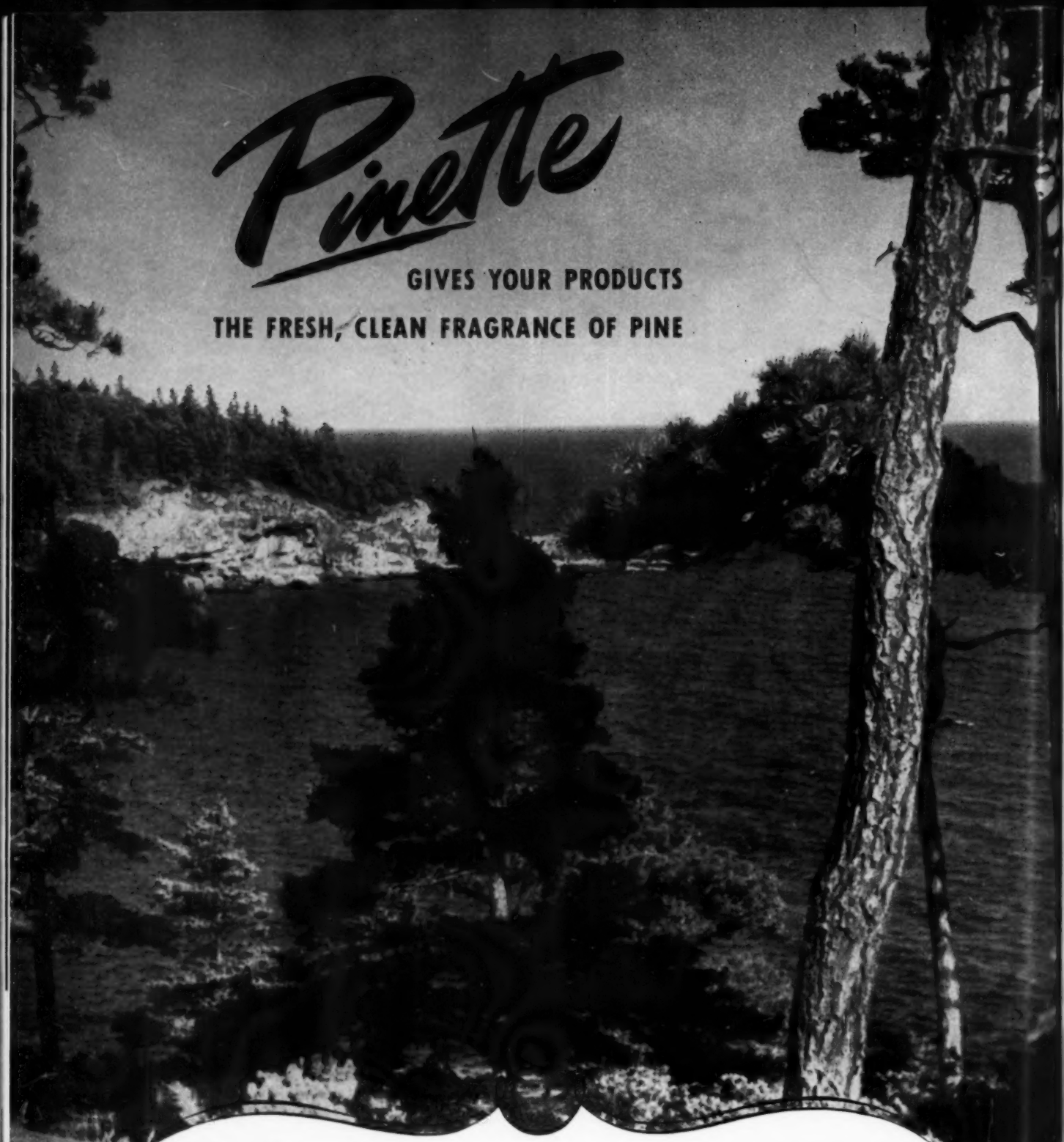


Figure 6. Slopes of the initial logarithmic survival curves for dust-borne bacteria as a function of relative humidity. RCOOK represents potassium ricinoleate; TEG, triethylene glycol; OPP, o-phenylphenol; $HgCl_2$—and phenol O-Syl represent the substitution of $HgCl_2$ and phenol, respectively, for the o-phenylphenol in O-Syl.





Pinette—the latest development of our Research Laboratories—is all you could look for in a pine fragrance. Its exhilarating balsamic odor combines with a light top bouquet fragrance to give your shampoos, soaps, bath oils, and bath salts the cool, pungent fragrance that is so popular in products of this type. Pinette's long-lasting qualities also make it an excellent oil for use in Incense. We'll be glad to send you samples. Just write to:

Aromatic Products, Inc.

15 East 30th Street, New York 16, N. Y.

ATLANTA • CHICAGO • DALLAS • PITTSBURGH • MEMPHIS • SAN FRANCISCO • LOS ANGELES

"O-Syl" serve largely to attract water molecules from the air, to solubilize the O-phenylphenol and to reduce the surface tension of the surface of the dust particle, then O-phenylphenol, a water insoluble chemical, should exercise no killing action when used alone.

O-phenylphenol plus potassium ricinoleate should then show a killing action greater than that shown by the soap alone but not as great as that of a mixture containing the propylenes glycol and glycerol. The results of experiments designed to establish the probable correctness of these assumptions can be seen in Figures 5 and 6. In Figure 5 we see the effect of O-phenylphenol alone. Spray-dried *pneumococci* were used in this study. The curves obtained with and without O-phenylphenol are due to humidity alone and not to O-phenylphenol. In Figure 6 we see that potassium ricinoleate alone shows the maximum in its action as anticipated. Potassium ricinoleate plus O-phenylphenol yield higher K values than potassium ricinoleate alone yet lower than those obtained with "O-Syl." Thus, it would seem that the hypotheses just stated have validity. The other curves shown here were obtained by substituting mercuric chloride and phenol respectively for O-phenylphenol in "O-Syl." Hence, for convenience, they have been referred to as H_gCl_2 O-Syl and phenol "O-Syl." As can be seen, phenol, a highly bactericidal agent, is not as effective as O-phenylphenol over a period of time. This is probably so because of the higher vapor pressure of phenol. Hence it would soon distill into the air and no longer be available for action against a bacterium. H_gCl_2, a water soluble, highly bactericidal substance, when substituted for O-phenylphenol, shows the effect of solubilizing the bactericidal substance. As the humidity increases, the number of molecules of water adsorbed from the atmosphere increases, possibly resulting in increased ionization of the mercuric chloride. Too, as the solution becomes more dilute, the rate of diffusion of the ions through the solution should increase; thus, this combined effect should result in a rapid increase in the death rate of the organisms with increase in relative humidity. The combined lethal effect of the humidity and the mercury ions probably accounts, as before, for the rapid increase in the death rate to a maximum at 52 per cent relative humidity and subsequent decline as the relative humidity is increased to 75 per cent.

Irreversibility of O-Syl

IN view of the fact that many reactions which had been thought to be bactericidal were found later to be reversible *in vivo*, thus indicating bacteriostatic rather than bactericidal activity, it became of interest to us to determine the *in vivo* reversibility of the action of "O-Syl." Spray-dried *pneumococci* and *streptococci* were used in these studies. The slides were inoculated and stored in constant humidity jars (relative humidity = 52 per cent) as previously described. On sampling the slides in broth at hourly intervals, 0.5 c.c. aliquots of the broth suspensions were inoculated intraperitoneally into each of five mice in both the control and test. Simultaneously, 0.5 c.c. aliquots were plated in blood agar and these plates were counted after incubation for 48 hours at 37° C. to determine the number of viable organisms inoculated into the mice. The hearts' blood of all mice dying was cultured and in each case of death, we were able to recover pure cultures of *pneumococci* or *streptococci*. Thus, it was clear that in each instance, the causative agent in the death of the mouse was the organism inoculated into the mouse. Table 2 summarizes the results of these tests. In each case, all control mice died whereas not one test mouse died. With the exception of the two plates in the test, the data indicated that no viable organisms were inoculated into these mice. The control data shows that as few as 10 pneumococci resulted in the death of a mouse. These data would seem clearly to establish the *in vivo* irreversibility of the action of "O-Syl" on bacteria.

TABLE 2

The Irreversibility of the Bactericidal Action of O-Syl In Vivo

	A. Pneumococcus					
	Control			*Test*		
Δ t hours	*Number of Bacteria*	*Number of Mice*	*Number of Deaths*	*Number of Bacteria*	*Number of Mice*	*Number of Deaths*
0	64	5	5	3	5	0
1	44	5	5	0	5	0
2	39	5	5	0	5	0
3	43	5	5	0	5	0
4	27	5	5	0	5	0
5	14	5	5	0	5	0
6	10	5	5	0	5	0
7	10	5	5	0	5	0
	B. Streptoccoccus					
0	254	5	5	1	5	0
1	203	5	5	0	5	0
2	197	5	5	0	5	0
3	184	5	5	0	5	0
4	198	5	5	0	5	0
5	163	5	5	0	5	0

Summary

"O-SYL" has been tested and found to be an effective germicide when dilute solutions are spread upon a glass surface and allowed to dry. These surfaces are much more effective against spray-dried organisms than against the highly resistant dust-borne micro-organisms. When "O-Syl" was used with triethylene glycol in the air, a very marked reduction in the number of viable micro-organisms on the surfaces was obtained. It was found that bacteria were much more susceptible to the action of "O-Syl" than were molds. The action of "O-Syl" on spray-dried *pneumococci*, type I, and *streptococci*, Group C, was found to be irreversible *in vivo*.

For control of roaches, ants, silver fish, red spiders and similar insects — ISOTOX Insecticides are applied by compressed air-type of equipment which forces Lindane directly into warm breeding areas, cracks, crevices, corners and hiding places. This system is preferred by many operators.

(Right) For control of clothes moths, carpet beetles and similar insects. Treat infested areas or areas where larvae are found. Aerosol equipment such as HI-FOG is extensively used for direct application as a space spray in hotels, theaters, homes and similar structures.

Only ISOTOX *INSECTICIDES containing* Lindane*

meet so many of your needs—so effectively

SPECIAL ADVANTAGES FOR P.C.O.'S

1. High potency, rapid action — and 3-way kill of pests (contact, stomach poison and vapor action). Lindane's high potency is approximately 10 times that of DDT, which means that lower dosage can be used.

2. Kills a wide range of insects, including clothes moths, carpet beetles, fleas, bedbugs, silver fish, house spiders, gnats, termites, powder post beetles, crab lice, human lice, flies, ants, roaches, earwigs, mosquitoes, lice.

3. Pleasant to use and practically odorless. Operators like to work with these insecticides.

4. Conveniently formulated for pest control operations.

Available in wettable powder, emulsive liquid or dust formulations.

Specify ISOTOX Insecticides or use *ORTHO* Lindane in your formulations. Write for free informative booklet containing full information on many uses of Lindane.

For general purpose insect control in kennels. Lindane's residual qualities make it especially suitable for flea and tick control — also for control of flies, mosquitoes, ants and ticks in kennels and farm buildings. Dr. R. A. Fulton and associates, working at Beltsville, Maryland, in the U. S. D. A., found that minute traces of Lindane vapors resulted in effective control (JOURN. ECON. ENT., April, 1950)

For control of fleas, bedbugs, lice, clothes moths and similar pests. Lindane gives best results when applied directly to cracks, crevices, bedsteads, sofas, mattresses, boxes or other typical hidden places — under furniture, margins of carpet, closets, shelves, trunks.

*Approved name for the 99%+ "Pure Gamma Isomer" of Benzene Hexachloride.

ORTHO
SCIENTIFIC PEST CONTROL

T. M.'S REG. U. S. PAT. OFF. - ORTHO, ISOTOX

CALIFORNIA SPRAY-CHEMICAL Corp. Offices throughout U.S.A.
Elizabeth 2, N. J.; Orlando, Fla.; Oklahoma City; St. Louis, Mo.; Richmond, Calif.

World Leader in Scientific Pest Control

Wax Additives

(*From Page* 126)

treated with sulfuric acid. The wax is obtained in a finely divided form through solvent precipitation, and the extraction is run with n-heptane at 75° F. to obtain a larger working amount of extract.

Sample P was 10.01 gms. of a mixture of ouricuri plus 10% paraffin. Sample O was pure ouricuri. Each was treated as follows:

The sample was placed in a 250 ml. wide mouth beaker, and dissolved in 25 ml. of n-heptane, using heat. On cooling the solution the wax precipitated out in the form of a very fine powder suspended in the heptane. To this paste was added 100 ml. of n-heptane, and the resultant slurry was agitated at a constant temperature of 75° F. for two hours. The solution was separated from the undissolved wax by filtration. The cake was washed once with 50 ml. of heptane.

The heptane solution was diluted to 200 ml. with heptane, and placed in a separatory funnel. 100 ml. of concentrated (98%) sulfuric acid added; a reddish precipitate appeared. The extraction was carried on for four hours with intermittent vigorous shaking. The lower acid layer, containing much of the precipitate, was withdrawn and discarded. The heptane fraction was saved. A small intermediate mixed phase was washed with water, and the heptane fraction in it filtered and added to the main heptane fraction. This heptane fraction was washed with water, and then neutralized carefully and completely with sodium bicarbonate solution. Any residual acid will cause charring in the next step.

The heptane was then evaporated, using a hot plate first and a vacuum oven for the final solvent removal. Weights of residue were:

Sample P 1.37 grams
Sample O 0.26 grams

This indicates a calculated 11% of paraffin.

A number of possible methods for detecting additives in vegetable waxes are examined. It appears that from the standpoint of simplicity and general usefulness, the technique of solvent leaching followed by specific tests on the extracted residue holds most promise. The extracted residue may then be examined qualitatively and quantitatively. In the present investigation this was done by:

(*Turn to Page* 155)

TABLE VI

Chemical Tests on Chloroform Extract of Extended Wax Samples

Pure Carnauba Plus 5% of the following:	*Sample gms*	*Residue from $CHCl_3$ Extract gms*	*Acid Number of Extract*	*Acid Equivalents*	*% Resin in Sample as Calculated from Acid Equivalents*
Shanco #300	10.021	1.184	32.5	39.5	4.8
Lewisol	10.005	1.139	23.8	27.1	3.3
Durez #219	10.042	1.150	36.9	42.4	4.2
Damar Singapore	10.013	1.233	21.2	36.1	7.2
Batu East India	10.011	1.030	12.7	13.1	..
Piccolyte S-115	10.016	1.200	11.3	13.5	..
1047 Fine Melt (Pale Congo)	10.011	1.191	37.8	45.0	4.2
Hydrogenated Castor Oil	10.006	1.233	12.5	15.4	..
Candelilla	10.004	0.933	15.2	15.1	..
Paraffin	10.032	1.100	12.0	13.2	
Pure Carnauba	10.029	0.796	17.1	13.6	
Pure Carnauba	10.109	0.929	13.4	12.5	
Bleached Carnauba	10.051	0.989	28.6	27.3	

TABLE VII

Chemical Tests on Chloroform Extract of Extended Wax Samples

Pure Carnauba Plus 5% of the following:	*Sample gms*	*Residue $CHCl_3$ Extract gms*	*Sap. Number of Extract*	*Basic Equivalents*	*% Resin in Sample as Calculated from Basic Equivalents*
Shanco #300	10.022	1.383	91.7	127	5.4
Lewisol	10.056	1.267	112	142	4.1
Durez #219	10.004	1.139	93.0	106	3.5
Damar Singapore	10.080	1.269	71.7	91	..
Batu East India	10.002	1.193	77.8	93	..
Piccolyte S-115	10.040	1.230	65.0	80	..
1047 Fine Melt Pale Congo	10.033	1.202	87.4	105	3.4
Hydrogenated Castor Oil	10.047	1.224	122.5	150	4.3
Candelilla	10.024	0.885	72.3	64	..
Pure Carnauba	10.067	0.747	93.7	70.1	
Pure Carnauba	10.056	0.739	88.0	65.0	

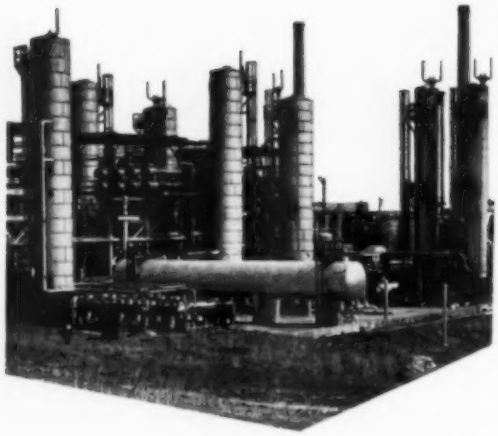
TABLE VIII

Chemical Tests on Chloroform Extract of Extended Wax Samples

Pure Carnauba Plus 5% of the following:	*Sample gms*	*Residue $CHCl_3$ Extract gms*	*Iodine Number of Extract*[1]
Shanco #300	10.142	1.295	20.7
Lewisol	10.138	1.240	22.6
Durez #219	10.002	1.306	19.5
Damar Singapore	10.040	1.300	22.1
Batu East India	10.050	1.157	23.6
Piccolyte S-115	10.175	1.315	21.1
1047 Fine Melt Pale Congo	10.000	1.266	21.5
Hydrogenated Castor Oil	10.000	1.230	19.7
Candelilla	10.032	1.023	24.4
Pure Carnauba	10.002	0.869	29.6
Pure Carnauba	10.105	0.840	27.1

[1] Hanus Method, see (1).

ALL THIS*... and pleasantness too!



is yours with new **VELSICOL**

SYREX 200

LUSTROUS WAX

SUGGESTED APPLICATIONS:

Emulsion Polishes • Solvent Polishes • Carbon Papers • Printing Inks • Protective Coatings • Molding Compositions • Leather Finishes • Coils and Condensers • Wire Insulations • Crayons

WEAR RESISTANCE • GLOSS • SELF-HEALING PROPERTIES AND PLASTICITY WITHOUT REDUCING MELTING POINT • STABILITY • FILM TOUGHNESS • WATER-RESISTANCE • PLUS AVAILABILITY AND PRICE STABILITY

Among the most welcomed of its many popular attributes* is pleasantness... refinement to the highest possible degree providing a raw material for developing an attractive product.

Ease of formulation with Syrex 200 results from wide range of compatibility, emulsification properties and high melting point. It has excellent film-forming properties and produces surface coatings which are hard, clear, adherent and glossy . . . retaining these qualities upon interior and exterior aging. For samples and particulars concerning your applications, write:

VELSICOL CORPORATION

General Offices and Laboratories: 330 East Grand Avenue, Chicago 11, Illinois
Export Division: 100 East 42nd Street, New York, New York

REPRESENTATIVES IN PRINCIPAL CITIES

Silicones . . .

(*From Page* 116)

ucts of new and different types—products that will meet consumer requirements better than any previous products and will, therefore, be in great demand.

The ability of the silicone fluids to prevent things from sticking can be made use of in an article that will be welcomed by every housewife. This is an ironing pad that practically eliminates the drag usually encountered in ironing starched goods or rayon. This pad can be made of asbestos or glass cloth and designed as a rest for the iron, or of less durable material, in which case the iron is merely wiped across the pad at intervals. This item appears to have a large potential market, but has not been exploited as yet.

Applications for the silicones in chemical specialties have hardly been touched. The few mentioned are only a fraction of those that are possible with our present methyl and phenyl types and were selected only as a means of illustrating some of the ways in which manufacturers are making use of the four basic properties which the silicones that are currently available appear to exhibit: 1. Resistance to heat and cold; 2. Outstanding release properties; 3. Useful surface characteristics; 4. Inertness.

Other silicones containing a wide variety of different chemical structures may some day be available. In the meantime, the forward looking technical man is asking himself, "How can I make profitable use of the silicones in my business."

Hard Surface . . .

(*From Page* 39)

Conclusions

THE data developed and the comparisons made indicate that the chemical structure of the surface active agent is relatively less important in painted surface cleaning than with cotton soil detergency, but that solution concentration has considerable bearing upon cleaning.

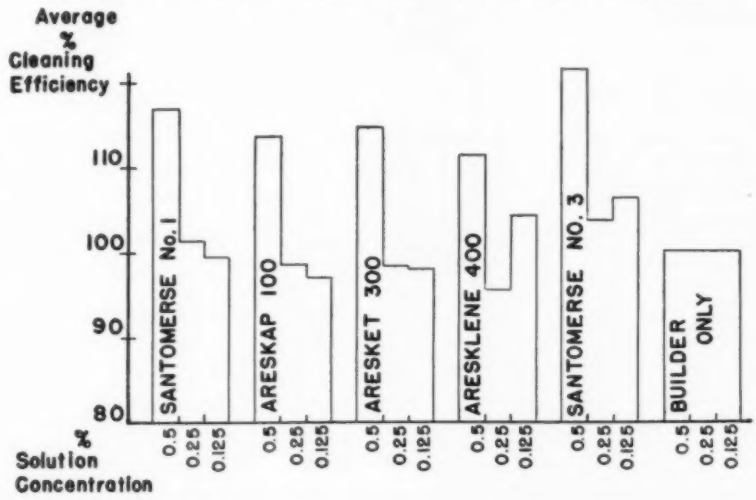
Flat surface cleaning in general appears to require lesser amounts of surface active agent than for cotton soil work, and the concentrations used are apparently higher than for cotton fabric cleaning. This test does not show the effect of the surface active agents in promoting thorough rinsing, prevention of hard water deposits, water spotting, or of the ease of wetting-out the surface involved, but these tests can be made separately, and the results correlated with the more practical soil removal values.

In comparison of the painted panel or metal cleaning test with that of the cleaning of soiled fabrics, the process is probably much less complex because of the difference in the relative surface areas involved. A further difference, at least in the painted panel test, is that the scrubbing action is tremendously more vigorous than in usual metal cleaning operations or cotton fabric washing. The difference in the extent of applied mechanical action carries over to practical operations.

Bibliography

1. N. K. Adam, "The Physics and Chemistry of Surfaces," Oxford University Press, London; 3rd Edition (1941).
2. Macauley, *Journal Royal Technical College*, Glasgow, Vol. 3, p. 357 (1935).
3. Armour and Company, Chicago.
4. J. W. Hensley, A. O. Long, and J. E. Willard, Journal American Chemical Society, Vol. 70, p. 3146 (1948).
5. S. Spring, H. I. Forman, and L. F. Peale, An. Edn., *Ind. and Eng. Chem.*, Vol. 18, p. 201 (1946).
6. W. P. Utermohlen, Jr., Am. Dyestuff Reptr., Vol. 39, No. 8, *Proc. Am. Assoc. Textile Chem. Colorists*, P. 262 (1950).
7. E. A. Leonard, *Soap*, Vol. 25, No. 4, p. 46, (1949).
8. E. H. Mann and C. C. Ruchhoft, *Public Health Reports*, 61 p. 877 (June 14, 1946).
9. S. Machlis and E. B. Michaels, *Soap*, Vol. 24, No. 9, p. 42 (1948).
10. H. L. Sanders and J. A. Yeager, Colloid Division, American Chem. Soc., March, 1950.
11. R. C. Hughes and R. Bernstein, *Ind. Eng. Chem.*, Vol. 37, p. 170 (1945).
12. J. C. Harris, M. R. Sullivan and R. E. Kamp, *Soap*, Vol. 26, No. 7, p. 32 (1950).
13. J. C. Harris and E. L. Brown, *J. Am. Oil Chem. Soc.*, Vol. 27, No. 4, p. 135 (1950).
14. J. C. Harris and R. E. Kamp, *Metal Fin.*, Vol. 48, No. 11, p. 75 (1950).
15. O. M. Morgan and J. G. Lankler, *Ind. Eng. Chem.*, Vol. 34, p. 1158 (1942).

Figure 2
Comparative Cleaning Efficiency—10% Agent, 90% Builder Composition.



Rodenticide Mixture

A mixture of three to five per cent thiocarbanilides with flour is suggested for use as a rodenticide. The thiocarbanilides may be manufactured by kneading 12.95 kg. aniline hydrochloride (or 17.95 napththylamine hydrochloride) with 7.75 kg. ammonium thiocyanate, and heating in an oven at 110-115° for six hours. The mixture is cooled, washed with slightly acid water at 60 to 70°, and then with pure. water. After drying, the product is dissolved in 92 per cent sulfuric acid and poured slowly into ice water. The precipitate is filtered off, washed free from acids and dried. Ital. Pat. 448,555 through *Chem. Abstracts*.

FINGER-TIP CONTROL

NEW push-button death to MOTHS and MOTH LARVAE

MOTH·O·BLITZ

MOTH PROOFS FOR A YEAR OR MORE with one application. Now it's a "cinch" to protect woolens from *all* cloth eating insects. Simply spray with Moth-O-Blitz and all worries are over. You can't see it, but Moth-O-Blitz leaves a fine coating that kills moths and moth larvae and eggs on contact. Moth-O-Blitz leaves no objectionable odor or crystals — it's non-inflammable and will not harm delicate fabrics.

12 OZ. HIGH PRESSURE CONTAINER, RETAIL **$1.98**

Quick-kill FLIES and OTHER INSECTS

12 oz. container only **$1.79**

HIGH PRESSURE

INSECT·O·BLITZ

The 100% killer of flies – mosquitoes – gnats and other flying insects. (By actual laboratory test). The *high pressure* behind the spray causes a mist so fine that it penetrates the most difficult to reach places—behind curtains and drapes—beneath furniture—to seek out and kill even the insects you can't see. Makes them drop and drop fast!

TETCO FIRE EXTINGUISHER

HIGH PRESSURE

A real high pressure extinguisher in heavy steel container. You need this protection from fires in the home, garage and car. Tetco is 90% carbon tetrachloride combined with other chemicals. Its CO_2 gas charge sprays a full 17 feet. Hermetically sealed—always full and always ready for instant, certain use. Sold complete with bracket for wall hanging.

16 oz. high-pressure container Retail only **$2.50**

TETCO CO.

DIVISION OF INDUSTRIAL MANAGEMENT CORP.
458 SOUTH SPRING STREET, LOS ANGELES and HOBART, INDIANA

Hand Cleaners

(*From Page 37*)

like the one cited (78) below might be helpful:

	per cent
Lanolin	10.0
Emulsifying wax B.P.	10.0
Sodium thiosulfate	5.0
Water	10.0
Soft paraffin, to make	100.0

Injury caused by photosensitizing agents, such as coal tar and its derivatives and certain oil distillate fractions, may be combatted by including suitable chemical or physical light screens in appropriate bases. A preparation combining the effects of both kinds of agents is given in the following type formula: (29)

	parts
Lanolin	58
Castor oil	30
Titanium dioxide	5
Menthyl salicylate	5
Synthetic detergent	2
Perfume	sufficient

The so-called flash burn protective creams, which have proved valuable in steel mills, in ships' engine rooms and similar places, have again come in for considerable attention for use by the armed forces. As a matter of fact the formulation of such products became a pressing matter during World War II and several successful flash burn creams were developed for use by gunners and loaders of large calibre guns. According to Glickman (79) one effective product of this sort was prepared from:

	per cent
Bleached dewaxed shellac	13.70
Isopropyl alcohol, 99%	28.48
Bodied linseed oil—2-3 viscosity	3.50
Triple pressed stearic acid	0.15
Triethylene glycol di-2-ethyl-hexoate	0.80
Diethylene glycol monethyl ether	1.10
Titanium dioxide—cosmetic grade	37.00
Sodium bicarbonate	2.25
Magnesium stearate	8.00
Menthyl salicylate	2.50
Sulfonated alcohol wetting agent	0.30
Iron oxide (lemon shade)	1.60
Mineral black	0.62

Much simpler is the following flash burn cream: (68)

	per cent
Titanium dioxide	40.0
Petrolatum	30.0
Sorbitan sesquioleate	10.0
Magnesium stearate	10.0
Water	8.0
Iron oxide	2.0

Melt the fats and add the pigments, bringing the temperature to 65°C. Bring the water to the same temperature and add it to the pigment-fat mixture with agitation. Pass through a colloid mill or homogenizer to get uniform dispersion.

(*Conclusion*)

Bibliography

41) DeVilliers, T. E.: U. S. Pat. 2,383,114, 1945.
42) Norwood, W. D.: *Indust. Med.* 12: 208, 1943.
43) Mason, H. S. & Botvinick, I.: *Public Health Rep.* 58:1183, 1943.
44) Schwartz, L.: *Ind. Hygiene Newsletter* 9:3, Sept. 1949.
45) Horsey, R. E.: *Mod. Sanit.* 1:19, July, 1949.
46) Gump, W.: Personal communication.
47) Trusler, R. B.: *Mod. Sanit.* 3:27, Jan. 1951.
48) Anon.: *Drug & Cosmetic Ind.* 67: 470, 1950.
49) Anon.: *Soap & Sanit. Chem.* 27: 34, Jan. 1951.
50) Schwartz, L., Warren, L. H. & Goldman, F. H.: *Public Health Rep.* 55:1158, 1940.
51) Goldman, L.: *South Med. J.* 37: 290, 1944.
52) Campbell, P. C., Jr.: *Ind. Hygiene Newsletter* 7:5, Nov. 1947
53) Lesser, M. A.: *Drug & Cosmetic Ind.* 53:630, 1943.
54) Schwartz, L. & Campbell, J. C., Jr.: *Ind. Hygiene Newsletter* 7:4, Aug. 1947.
55) Anon.: *Chem. & Drug Export Rev.* 9:53, July 1948.
56) Crone, R.: *Domestic Commerce* 32:18, March, 1944.
57) Nielsen, C.: *Am. Perf. & Essent. Oil Rev.* 46:43, April, 1944.
58) Swanston, C. N.: *Brit. J. Phys. Med. & Ind. Hyg.* (through) *Pharm. J.* 154:6, 1945.
59) Anon.: *Schimmel Briefs*, No. 174, Sept. 1949.
60) Horner, S. G.: *Pharm. J.* 160:8, 1948.
61) Markuson, K. E., Mancuso, T. F. & Soet, J. S.: *Indust. Med.* 12: 383, 1943.
62) Sadler, C. G. A. & Marriot, R. H.: *Brit. Med. J.* 2:769, 1946.
63) Anon.: "Breck Industrial Preparations," Springfield (Mass.) John H. Breck, Inc., 1950, p. 3.
64) Hopf, G.: *Arch. f. Dermat. u. Syph.* 181:204, 1940.
65) Downing, J. G., Ohmart, L. M. & Stoklosa, M. J.: *Arch. Dermat. & Syph.* 49:436, 1944.
66) Holland, M. O.: *Pharm. Internat.* 3:32, March, 1949.
67) Cumming, W. M., Cameron, M. C., Cumming, E. B. & Macraild, M. C.: *Brit. J. Ind. Med.* 4:437, 1947.
68) Anon.: "A Guide to Drug and Cosmetic Formulation," Wilmington, Atlas Powder Co., 1950, pp. 19-20.
69) Francke, D. E.: "Formulary of the University Hospital," Michigan, Ann Arbor, 1945, p. 312.
70) Anon.: *Drug & Cosmetic Ind.* 63: 655, 1948.
71) Davies, R. E. M.: *Soap, Perf. & Cosmetics* 21:684, 1948.
72) Klose, R.: U. S. Pat. 2,306,887, 1942.
73) Anon.: "Emulsions and Detergents," Ed. 8, New York, Carbide & Carbon Chemicals Corp., New York 1949, pp. 54-5.
74) Hopkins, S. J.: *Manuf. Chem.* 18: 389, 1947.
75) Ross, P.: *Brit. Med. J.* 2:369, 1948.
76) Schwartz, L.: *J.A.M.A.* 125, 186, 1944.
77) Reuter, M. J.: *Indust. Med.* 10: 147, 1941.
78) Anon.: *Manuf. Chem.* 19:518, 1948.
79) Glickman, C. S.: *Drug & Cosmetic Ind.* 57:328, 1945.

Disinfectant Additive

The addition of 4,4′ dihydroxy-3,3′-dimethylbiphenyl or its salts to emulsions, powders or pastes imparts a disinfecting or preservative action to the product. The lethal dose of the compound is 1.5 grams per kilogram per os (mouse test). It is stable on boiling, odorless, tasteless, and may be used in dry or dissolved form. Ger. Patent 800,877, through *Chem. Abstracts.*

Insecticide Dispersions

Solid insecticides may be dispersed uniformly in water by dissolving the solid in a small amount of solvent to form a supersaturated solution at room temperature. The solution is then emulsified with water to yield a mixture from which the solid does not crystallize until the emulsion is sprayed on a surface, and the liquid portion evaporates. An example of such an emulsion is as follows: add 40 parts of DDT to 60 parts of 60 per cent sodium sulforicinoleate, stirring constantly; warm slightly to encourage solution; add this warm solution to a double volume of water and stir. Another insecticide-solvent combination consists of 50 parts of DDT added to 15 parts of sodium sulfoleate and eight parts of soap (made from 33 parts olive oil, 67 part rosin, and 27 parts light mineral oil) add this solution to water as before. Ital. Pat. 444 074 through *Chem. Abstracts.*

The Finish With

TOP RATING

▲

FEDERAL

MASTIC ASPHALT

TILE FINISH

Seals & Finishes in 1 Coat

- Gives Glossy Lustrous Finish
- Seals and Finishes — Resists Wear
- Dries in One Hour
- Will Not Discolor or Soften Tile
- Applied with Brush or Applicator
- Can Be Buffed with Steel Wool
- Withstands Mild Soap Solutions
- Resists Deteriorating Elements
- Adds Years of Life to Asphalt Tile
- Easily Removed
- Reduces Slip Hazard — Needs No Waxing
- Approved by Underwriters Laboratories

Send for Literature

Federal VARNISH DIV.

ASHLAND AVE. AT 29th ST.
CHICAGO 8, ILLINOIS

HERE'S HOW

TO SELL MORE
LIQUID SOAP

There's a market for your liquid soap that you haven't yet sold. All it needs is a dispenser priced low enough to overcome initial sales resistance. We designed the new PEER No. 50 to meet this need.

Present supplies permit immediate delivery of all orders. Write for memo sample and prices.

MOORE BROS.
COMPANY

100 WARREN ST. NEW YORK 7, N. Y.

TRADE NEWS

New N. Y. Velsicol Men

The appointment of George K. Schumaker as eastern sales representative and the transfer of W. H. Burns

GEORGE K. SCHUMAKER

from the Chicago sales office to the New York sales area were announced recently by Velsicol Corp., Chicago. Both men are making their headquarters at the company's New York office 100 E. 42nd Street. Mr. Schumaker was graduated from Pennsylvania State College with a B.S. degree in organic chemistry, subsequently receiving a master's degree in entomology at the University of Illinois. Before joining Velsicol he was associated with Eimer & Amend, New York manufacturers of chemicals and chemical equipment. He also was with the Pennsylvania State Department of Agriculture, Bureau of Plant Industry, in field entomological work.

W. H. BURNS

Mr. Burns, for the past year and one-half has been in technical sales in the Chicago headquarters of Velsicol. He is a chemical engineering graduate of Illinois Institute of Technology, and joined Velsicol as a laboratory assistant in 1948.

Richard O. Hartley formerly represented Velsicol Corp. in New York.

Approve U. S. I. Merger

Stockholders of National Distillers Products Corp., New York and U. S. Industrial Chemicals, Inc., New York, approved a proposed merger involving the two companies at special meetings held June 6. The proposed merger agreement calls for the exchange of two shares of National Distiller's common stock for one share of U. S. Industrial Chemical's common stock.

Ousley Rawleigh Head

H. P. Ousley was elected recently as president of W. T. Rawleigh Co., Freeport, Ill., household specialty products firm. He succeeds W. T. Rawleigh, who died January 23 at the age of 80.

In Winthrop-Stearns Post

Russell H. Krebs was recently appointed manager of the Metropolitan "A" division of Winthrop-Stearns, Inc., New York. The division covers the borough of Manhattan. Mr. Krebs succeeds James T. Bollettieri, who has resigned.

Hoffman Outing July 20

The annual golf outing of F. W. Hoffman & Co., Philadelphia, is to take place at Llanerch Country Club, Philadelphia, July 20. The affair, which includes quoits for the non-golfers, is tendered for the supply salesmen and old friends of F. W. Hoffman & Co. Harold J. Kelly is in charge of arrangements for the day's outing, which is topped off by dinner and the awarding of prizes in the evening.

Opens Wax Department

Hans Tobeason, Inc., 33 Rector St., New York 6, recently announced the opening of a new wax department

PETER HAHN

under the direction of Peter Hahn, formerly of Wax and Rosin Products, Inc., New York. The firm is specializing in the importing and distribution of natural waxes and related products.

Reilly Names Schulte

The appointment of J. J. Schulte as district manager, operating from the new Cleveland sales office of Reilly Tar & Chemical Corp., Indianapolis, was announced recently by Peter C. Reilly, Jr., vice-president in charge of sales. The new office, located at 20106 Kinsman Road, Shaker

J. J. SCHULTE

BUY NAMICO • FOR A BETTER BUY • BUY NAMICO • FOR A BETTER BUY • BUY NAMICO • FOR A BETTER BUY • BUY NAMICO • FOR A BETTER BUY • BUY NAMICO • FOR A BETTER BUY •

AN
OUTSTANDING PRODUCT
FOR
SELF-SERVICE LAUNDRIES AS WELL AS
INSTITUTIONAL AND
INDUSTRIAL LAUNDERING

IMPROVED

SPECIAL BUBBLES

NEW FORMULA—BETTER THAN EVER

NEW LOWER PRICE

- Complete, high-grade soap compound;
- Contains water softeners;
- Produces strong, sturdy suds—mildly alkaline;
- Removes soil and grease effectively.

National Milling & Chemical Company

Industrial Soap Products Since 1896

4603 NIXON STREET • PHILADELPHIA 27, PA.

Now Available

MODERN CHEMICAL SPECIALTIES

by Milton A. Lesser

514 pages — 42 chapters

CONTENTS

DETERGENTS AND CLEANERS—Dishwashing detergents, abrasive cleaners, hand cleaners, medicated soaps, carpet and rug cleaners, paint brush cleaners, stain removers, etc.

POLISHES—Furniture, glass, aluminum, metal, silver, auto, and stove polishes.

FLOOR CARE PRODUCTS—Floor soaps and cleaners, waxes, floor oils and sweeping compounds, crack fillers, sealers and hardeners.

TEXTILE PRODUCTS—Laundry bluings, starches, sours, bleaches, mildew preventives, moth products.

PRODUCTS for LEATHER CARE—White shoe dressings, leather cleaners and renovators, saddle soaps, colored polishes.

INDUSTRIAL and HOUSEHOLD SPECIALTIES—Washroom sanitation specialties, cooling system cleaners, boiler compounds, water softeners, soot removers, air deodorizers, paint and varnish removers.

A new text covering formulation, manufacture and use of many chemical specialties is now available. This practical book is invaluable to the manufacturer, chemist, and marketer. Order your copy now.

514 pages $7.25 in U.S.A.
42 chapters $7.75 elsewhere
Add 3% Sales Tax if in New York City
Check must accompany order

MAC NAIR-DORLAND CO.
Publishers
254 WEST 31st ST.
NEW YORK

Heights, is handling sales in eastern Michigan, Ohio, western Pennsylvania and the Buffalo area of New York. Mr. Schulte is a graduate of Ohio State University in chemical engineering. He started in the manufacture of coal tar products in 1921 and during the past 30 years has built and operated coal tar refineries in Chicago, Dover, O., Newark, N. J., Fairmount, W. Va., and Cleveland.

Ex-Cell Buys Safeguard

The purchase of the Safeguard Oil Waste Can Division of General Detroit Corp., Detroit, by Ex-Cell Products Co., Chicago, was announced recently by M. L. Goldberg, president. Included in the purchase is the acquisition of the Safeguard machinery, dies and entire inventory.

New Wastebasket, Mats

A new, streamlined "Executive" wastebasket, 12 x 12 x 15 inches, with a body of 24 gauge steel and large, 20 gauge feet was announced recently by Franklin Metal Products Co., Chicago, during the recent convention and trade show of the National Sanitary Supply Association in Cleveland. The new Franklin waste receptacle has ¼ inch wire around the top, rubber corners and rubber grommets on feet. It is said to meet U. S. government specifications and fire law regulations. It comes in green, grey and walnut, packed four to a shipping carton weighing 25½ pounds.

Also exhibited at the show were new "No-Trax" all rubber link mats made by Superior Rubber Mfg. Co., Chicago. They are one-half inch thick and come in standard widths of 24, 30, 36 and 48 inches, lengths as desired. Colors are black, green, white and red, all with black edging. Names in contrasting colors can be built into these mats, which also can be bought by the roll. Standard width rolls are so constructed that any length piece may be cut in multiples of three inches in length. Cutting is done with an ordinary knife. Any desired length of standard width "No-Trax" can be furnished with steel reinforced bevel ramps on ends. Sides are equipped with narrow protective edging.

Joins Baird & McGuire

Robert P. Sheehan of Boston, was appointed recently as a sales representative of Baird & McGuire, Inc.,

ROBERT P. SHEEHAN

Holbrook, Mass. He is covering New England, New York State, Ohio, Pennsylvania and Kentucky for the firm. A native of Boston, he was educated at schools in Brockton, Mass., later attending St. Anselem's College in Manchester, N. H. Following this he served for over three years in the United States Army Railway Battalion, which moved vital material in Great Britain and Europe.

Cameron Baird Marries

Cameron Baird, who covers New York and the southern territory for Baird & McGuire, Inc., Holbrook,

Gordon M. Baird, president of Baird & McGuire, Inc., Holbrook, Mass., with his brother Cameron following commencement exercises at Middlebury College, where the latter received his master's degree in chemistry from Middlebury.

Mass., was married June 30 to Miss Ann Graham of Scituate, Mass. Following their honeymoon, the couple will reside in East Orange, N. J. Mr. Baird, brother of Gordon M. Baird, head of Baird & McGuire, is a graduate of Norwich University, from which he received a B.S. degree. Following two years' service with the U. S. Navy during World War II, he received a master's degree in chemistry from Middlebury College, Vermont. Mrs. Baird has just been graduated from Middlebury.

McCauliff Glyco V.P.

The election of Eugene McCauliff as vice-president in charge of sales of Glyco Products Co., Brooklyn, was announced recently. He has been in charge of technical service and development since 1944. Prior to this he was connected with Hooker Electrochemical Co., Niagara Falls, N. Y.

New Warfarin Mailing

The latest mailing on warfarin rodenticide issued by Wisconsin Alumni Research Foundation, Madison, contains information on how to avoid spoilage of warfarin baits in hot weather. Suggested ways to avoid possible spoilage include keeping the moisture content of the product below 10 percent. This reduces likelihood of molding and of insect infestation, according to the release. The making up of frequent batches to shorten the storage period of the product is also advised, as is the use of coarsely cut or rolled oats as an ingredient of finished baits, particularly in summer. Oats have natural antioxidant properties and tend to retard the development of rancidity in any cereal mixture, and they are said to be less susceptible to molding and insect infestation than any other ground cereal grains such as corn meal. The recommendation also states that best quality, mature, sound cereal grains should be used in warfarin baits.

In addition to reprints of advertisments appearing in consumer magazines, a montage of publicity stories on rodent control and warfarin appearing in newspapers is included. Several suggested spot radio announcements are part of the mailing, too.

SEE this New HEAVY DUTY

CALMAR SPRAYER
for Pint and Quart Applicators

Here is a fool-proof sprayer available at a fraction of the cost of hard-to-get metal sprayers. Heavy duty construction assures long life and peak efficiency for many, many thousands of gallons. Designed with extra long stroke to deliver a full 3 cc in a finely atomized spray reaching up to 10 ft. White and red collar and head combinations.

ENGINEERED FOR:

- Room Deodorants
- Disinfectants
- Residual Type Insecticides
- Fungicides
- Moth Sprays

and similar products that do not contain aromatic hydrocarbons, ketones or esters

Our Business is Built on Making Your Products Easier to Use... Easier to Sell

Calmar Company

Designers and Manufacturers of
FUNCTIONAL CLOSURES FOR THE PACKAGING INDUSTRY
6800 McKINLEY AVE., LOS ANGELES 1, CALIFORNIA

Thousands of Maintenance Managers use AMERICAN STANDARD man-sized wet-mops, sweep mops and applicators exclusively. The nation's most successful distributors regularly supply those thousands of AMERICAN STANDARD enthusiasts.

for both ROUGH and smooth floors

For years the VICTORY Wet Mop has been our biggest seller. Thousands of maintenance men use VICTORY wet mops exclusively! Heavy-duty, quality yarn . . Your best bet, if you want a mop of extraordinary durability, performance and economy.

"BIG X" SWEEP MOP

This sweep mop is our leader. Snatches up dust on contact. It's nationally famous. A durable giant—available in widths up to 5 feet! Can be removed from the block for washing Once you try BIG X, you'll use no other.

HOLZ-EM APPLICATOR

You'll enjoy the fast, thorough performance of this luxurious, high-speed applicator. Reduces cost of applying wax, seals, varnish, etc. More professional floor finishers use HOLZ-EM than any other applicator

Jobbers

Complete catalog of our nationally-advertised mops, applicators, dusters, mitts, and custom-made items, on request.

"TOPS IN MOPS"
AMERICAN STANDARD MFG. COMPANY
Incorporated 1908
CHARLES E. KREBS and WALTER O. KREBS
2515 S. GREEN STREET • CHICAGO 8, ILL.

Pyrethrum Shortage Acute, 1330 Bales Are Lost on Ship

ALREADY in short supply, world stocks of pyrethrum, and particulary American stocks, were further reduced last month through the loss of 1,330 bales of flowers en route from East Africa to New York aboard the Robin Line Steamship, *Robin Doncaster*. Badly damaged by storm and a tidal wave off the coast of South Africa, the *Robin Doncaster*, which had left the port of Mombasa, Kenya, early in May, put into Durban, S. A., with her No. 1 hold flooded. The damaged pyrethrum was believed to be a total loss after unloading and examination. Damage was complicated by the fact that the flooded hold also carried wattle bark, a vegetable tanning material, which contaminated the pyrethrum, causing bad discoloration.

Of the 1,330 bales of pyrethrum flowers, 1,200 were reported to have been shipped from the Belgian Congo and 130 from Kenya, a total of approximately a half-million pounds, valued over $150,000. The flowers were consigned to three prominent pyrethrum processors and were planned for use during the current season to aid in relief of the shortage in the U. S. Possibility of partial salvage of the damaged bales exists, according to one authority, who stated that if penetration of salt water and formation of mould had not progressed too far, undamaged portions of the bales might be recovered.

The shipment aboard the *Robin Doncaster* comprised the largest lot to come forward this year to supply the needs of the depleted American market. Since the 1,330 bale loss, other shipments have come into the U. S., but have been relatively small and insufficient to relieve the scarcity of all pyrethrum products. Last month, one arrival comprised 300 bales, and early this month an additional 250 bales arrived. Other arrivals anticipated are for late July and early August at New York, which, according to insecticide manufacturers, will be too late to supply the 1951 seasonal market. If any salvaged flowers are available from Durban, importers here anticipate that it will be late August or early September before they could reach the U. S. after handling and re-shipping. Pyrethrum experts, representing American processors flew to Durban last month to investigate the damage and supervise any possible salvage operations.

Williams Calspray V.-P.

The appointment of P. S. Williams as vice-president was announced recently by California Spray-Chemical Corp., Richmond, Calif. He was formerly manager of the manufacturing department, and began his career with Calspray when he joined Standard Oil of California's engineering department in 1921 as its first chemical engineer.

New Potdevin Plant

The beginning of construction of a new, one-story modern industrial brick building to house its paper bag, printing and coating machinery manufacturing activities was announced recently by Potdevin Machine Co., Brooklyn. The new plant, which will provide 180,000 square feet of floor space, is located on North St., Teterboro, N. J., eight miles west of the George Washington Bridge. The Potdevin Export Corp. will also be housed in the new building. The plant is located on a six-acre tract and will not only combine all present Potdevin manufacturing and sales operations under one roof, but will provide for immediate and future expansion plans. The new plant is expected to be ready for occupancy around Sept. 15, 1951.

Exterminating Firm Moves

David Feinson, president of Atlantic Exterminating Co. announced recently that the firm had moved to its own building at 199 Hugenot St., New Rochelle, N. Y.

Purdue PCO Fraternity

A national professional pest control fraternity, Pi Chi Omega (PCO), was formed recently at Purdue University. The chapter at Purdue is Alpha, and it has received the provisional approval of the University and is now one of the established organizations of the Purdue campus. Honorary members of the fraternity, which now has 20 members from nine states, include: Dean Vern C. Freeman, associate dean of the School of Agriculture; Prof. J. J. Davis, chief in entomology; Prof. H. O. Deay, professor of entomology, all of Purdue, and William O. Buettner, executive secretary of the National Pest Control Association. The fraternity is an indirect outgrowth of the first four-year course in pest control which was established at Purdue in 1946. Aims of the fraternity include: further study of the science of pest control; encouragment and promotion of formal education of potential members of the pest control industry; cooperation with the National Pest Control Association in furthering its aims; the furthering of information that is of significance to members of the pest control industry; the furthering of public respect for and confidence in professional pest control.

New Potdevin Plant, construction of which began recently in Teterboro, N. J.

YOU CAN COUNT ON KOPPERS

. . . for TAR ACID OILS

Any required tar acid percentage. Guaranteed coefficiency based on tar acid content. Crystal free at 0°C.

. . . for CRESYLIC ACID

99% minimum purity. Clean, uncontaminated odor. Boiling range and chemical compositions appropriate for all applications and required solubilities.

. . . for U.S.P. CRESOL

90% distills within range of 7°C., which betters Pharmacopoeia requirements.

KOPPERS COMPANY, INC.
Pittsburgh 19, Pa.

KOPPERS

"TAKES MORE THAN MUSCLE TO KEEP IN SHAPE"

. . . . and it takes definitely more than muscle to keep your floors in shape!

Trio EMULSION Paste Wax is the revolutionary paste wax. It Cleans and Polishes In One Operation — giving the floor a tough, lustrous protective finish.

Trio EMULSION Paste Wax is highly recommended for use where a solvent type wax cannot be used.

- *It prevents bleeding of colors and pitting of asphalt and rubber tile floors.*
- *Its highly efficient cleansing properties eliminate harsh scrubbing and mopping.*
- *Its resistance to scratching and cracking make it the protective wax of choice for home, industry and institutional use.*
- *Can be effectively used on furniture, enamelled and painted surfaces.*
- *It is water resistant and long lasting — economical and labor saving.*

Bulk quantities, Standard or Private Label packaging. Available in 20 ounce and 5 lb. cans and 35 lb. pails.

Send for descriptive literature and price quotations.

TRIO *Chemical Works, Inc.*

341 SCHOLES STREET • BROOKLYN 6, N. Y.

SANITARY SUPPLIES MANUFACTURERS FOR DISTRIBUTORS — JOBBERS — WHOLESALERS

Sanitation Food Technologists' Topic

REPORTS on the sanitation of food and drug plants, pesticides in food production, and toxicity of chemicals in foods were among the papers presented at the eleventh annual meeting of the Institute of Food Technologists, held June 17 to 21, at the Hotel New Yorker, New York.

In his report on the "Control of Sanitation in Food and Drug Plants," C. A. Herrmann, Food and Drug Administration, New York, pointed out that the primary problem of sanitation in a food plant is one of prevention, that is of building and blocking out rodents, vermin, and insects, controlling the raw materials coming into the plant and further control during processing, packaging, storage and handling.

Jerome Trichter, New York City Health Dept., discussed inspection of food plants by official inspectors, and encouraged the periodic employment of a qualified inspector by the plant to make regular "in-plant" surveys.

In considering the "Toxicity of Chemicals in Foods," B. L. Oser, Food Research Laboratories, Inc., Long Island City, N. Y., pointed out that in the analysis of toxicological tests designed to give evidence for the safety of chemicals in foods, it is important to remember that experimental conditions are so rigid or so exaggerated that many chemicals in current accepted usage would not pass. He indicated also that the exclusion of useful chemicals by reason of too severe criteria for safety might not be in the best public interest. Still another report of considerable interest to the chemical specialties industry, was that by L. S. Hitchner, National Agricultural Chemicals Assoc., Washington, D. C. on "Pesticides Essential to Food Production."

A considerable number of the exhibitors at the convention featured cleaning materials, disinfectants, sanitation products, deodorants and other specialties. Wyandotte Chemicals Corp., Wyandotte, Mich., exhibited its new synthetic detergent "Promoted," containing sodium CMC and designed for use on marble, tile and terrazzo floors, as well as painted surfaces. Wyandotte also featured "Kromet," its detergent - sanitizer for glasses and dishes; "Geego" a machine dishwashing detergent; "Spartec," "F-100," and "Detergent," a dish-washing sanitizer, floor and paint cleaner, and tile and porcelain cleaner, respectively.

Griffith Laboratories, Inc., Newark, N. J., featured "Erado," a sterilizer and mold inhibitor, containing a quaternary ammonium salt, sodium carbonate, trisodium phosphate, and sodium alkyl aryl sulfonate; and "Klenzall," a general cleaning product for floors, walls, etc.

Glyco Products Co., Brooklyn, N. Y., issued literature describing its line of defoaming agents, surfactants, emulsifying agents, wetting agents, and stabilizers.

An interesting exhibit by Sellers Injector Corp., Philadelphia, Pa., illustrated the use of hydraulic scrubbing action in the use of its "Hi-Pressure Jet Cleaner," which can be used with soap or synthetics.

Atlas Powder Co., Wilmington, Del., featured "Renex" its non-ionic detergents for compounding a variety of cleaners. Atlas also distributed literature on its emulsifiers, sorbitol, and mannitol.

"Roccal," the quaternary ammonium sanitizing agent for dairies, food industries, bathing facilities, barber shops, etc., was exhibited by Sterwin Chemicals, Inc., New York.

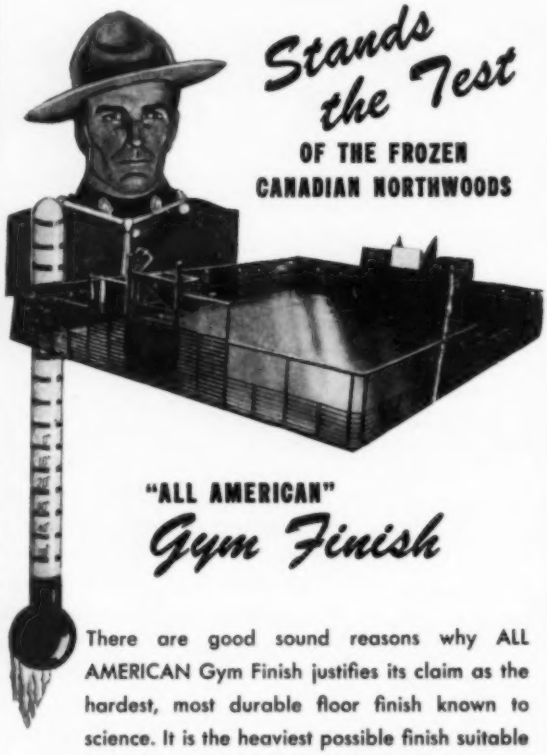
American Lecithin Co., Woodside, N. Y., presented its new colloid emulsifier and antioxidant "Alcolec," suggested for use in soaps, etc.

Several germicidal, cleaning, and deodorant products were exhibited by Oakite Products, Inc., New York. These included: "Bactericide," a new germicidal, disinfecting and deodorizing product; the Oakite "Sanitizer," and several other Oakite products. Bulletins devoted to cleaning operations, lime scale removal, steam cleaning, removal of milkstone, etc., were issued.

Klenzade Products, Inc., Beloit, Wis., exhibited its fog sanitizing unit and mineral light testing unit for ultra-violet detection of milkstone, etc.

Other exhibitors included: H. Kohnstamm & Co., New York; American Can Co., New York; Florasynth Labs, Inc., New York; The Pfaudler Co., Rochester, N. Y.; Continental Can Co., New York; Dodge & Olcott, Inc., New York; W. J. Fitzpatrick Co., Chicago, Ill.; Food Machinery & Chemical Corp., New York; Magnus, Mabee & Reynard, Inc., New York; and Merck & Co., Rahway, N. J.

Painting of "Fleeting Gazelle" by Domenico Mortellito, artist with E. I. du Pont de Nemours & Co., was done entirely with aerosol paints, a new technique.



Stands the Test

OF THE FROZEN CANADIAN NORTHWOODS

"ALL AMERICAN"

Gym Finish

There are good sound reasons why ALL AMERICAN Gym Finish justifies its claim as the hardest, most durable floor finish known to science. It is the heaviest possible finish suitable for lambs wool application. It costs less to use, because it wears longer and saves the cost of frequent refinishing. ALL AMERICAN is mirror smooth, non-glaring, not slippery . . . will not rubber-burn, does not progressively darken with age. Dries quickly and will stand repeated cleaning with strong alkaline solutions.

BE READY to supply this better finish to your Gym Floor customers. Write today for sample, label, specifications, prices.

On this exposed outdoor gym floor "All American" Gym Finish retains its beauty and protective quality through ice and snow and temperatures as low as 50 degrees below zero.

IMMERSION TESTED

Gasoline	24 hours
Alcohol	24 hours
5% Caustic	96 hours
33% Sulphuric	168 hours
Boiling water	3 hours

our 65th year

T. F. WASHBURN COMPANY

2244 Elston Avenue Chicago 14, Illinois BRunswick 8-6760

Now available . . .

SYNTHETIC DETERGENTS

by John W. McCutcheon

435 Pages

CONTENTS

Chapter 1 — INTRODUCTION — Development of surface active agents, particularly synthetic detergents.

Chapter 2 — FUNDAMENTALS OF SURFACE ACTIVITY—Nature of forces at surfaces, relation of surface activity with emulsification, foaming, detergency, etc.

Chapter 3—EVALUATION METHODS AND ANALYTICAL EXAMINATION OF DETERGENTS — Various, analytical tests are described, as well as tests for handling and purchasing.

Chapter 4—EXAMINATION OF SURFACE ACTIVE AGENTS AND SYNTHETIC DETERGENTS BY CLASS AND TYPE—Discussion of each class with regard to chief types, characteristics, and future utility.

Chapter 5 — MANUFACTURING PROCESSES AND RAW MATERIALS—Technique involved in the manufacture of a number of typical classes of surfactants is given. Source and preparation of raw materials is included also.

Chapter 6 — TRADE NAMES PRODUCTS AND PROCESSES — Nomenclature of commercial products, by composition, form or other characteristics.

Chapter 7 — APPLICATION AND USE — Formulas and uses included cover the textile industry, leather and fur industry, paper industry, dairy and food industry, laundry, household cleaners, insecticides, etc.

APPENDIX—List of 700 surfactants, classification of surfactants, A.O.C.S. analytical methods.

$7.10 in U.S.A. $7.60 elsewhere

Add 3% Sales Tax If in New York City

Send Check With Order

MAC NAIR-DORLAND COMPANY

publishers

254 West 31st Street, New York, N. Y.

N.S.S.A. Meeting

(*From Page* 121)

the profit is 20 percent. His firm sells little paper, he explained, adding that business is turned down if it is not profitable.

Among the suggested solutions to the problem of manufacturers who sell direct, was that of not doing business with firms that indulge in the practice. On nationally advertised products one dealer said he sold for more than the list because he was in a position to give service and fast delivery. Another distributor pointed out that the danger of charging more than the manufacturer's list price on some items is that customers assume that all of the items in a line are overpriced. The sale of nationally distributed brands under private label was advanced as a solution to the problem of the short profit margin on certain advertised brands. Still another dealer said he did not pay salesmen commission on such short profit items.

The question of meeting competition from cooperatives was also touched on in the forum. Of the recommendations advanced for meeting competition from these tax free units, one was to combat it with better service, the other counseled meeting the cooperatives' prices. An investigation into the legality of cooperative buying was asked for and agreed to by the association.

"Association meetings are of great benefit to an industry," it was stated by Dr. E. B. Buchanan, Commissioner of the Cleveland Health Department, the final speaker of the afternoon. Much is to be learned at such meetings, he observed. He said he was glad to hear that soap is still on the market and is not as extinct as the dodo. Listening to the radio, he explained, he receives the impression that synthetic detergents had completely replaced soap.

In a serious vein, he declared that the health sanitarian is the advance man of the sanitary supply industry. Nurses, health inspectors, etc., are going around urging people to clean up. The sanitary supply salesman should take advantage of this situation by following up and selling cleaning materials. Dr. Buchanan said he wondered if the salesman is doing as good a job as other sanitarians. Salesmen, he explained, should help the consumer by teaching him how to use a product correctly. He should aid the consumer in selecting products and check later to see if the consumer is using the product.

"If the merchandise is standing on the shelf and is not being used, it does no good," Dr. Buchanan stated. He also urged the cooperation of the sanitary supply industry in helping health departments to run schools of sanitation. These can be used to show industry and institutions how best to clean.

"If you can teach industry how to do a job with a product, it makes no difference how it is packaged," the speaker asserted. He also suggested participation by sanitary supply people in symposia on such topics as the maintenance of the new plastic floors.

"How many floors are going to be ruined through lack of knowledge and the use of the wrong products?" Dr. Buchanan asked. "Don't talk brand names, but general types of products," he urged.

The idea of holding industrial and institutional schools on sanitation will work, he said. It has been tried in the milk industry, which recently held a four-day meeting devoted to a discussion of milk sanitation. He said this is a healthy condition, and announced that the ice cream industry had donated a soda fountain for use in the Cleveland school on cleaning sponsored by the health department. As part of this school, representatives of the ice cream industry have been invited to discuss handling of ice cream.

"If you can sell salesmen on the idea of selling the product they have instead of selling what they have not got they can get along marvelously," Dr. Buchanan counseled.

After reading the widely quoted definition of sanitation as a way of life, Dr. Buchanan concluded by pointing out that today sanitation is an American way of life. Persons migrating from other countries come into our slums and think they are living in a palace. They do not understand our way of life in the first generation, he said. Sanitarians are trying to be missionaries and preach sanitation so that the sanitary supply salesman can come in and finish the job with his products.

The final feature of the 28th annual convention was the banquet and entertainment at the Carter Hotel, June 5. Occupying the largest banquet hall available in Cleveland, a record attendance of over 900 members and guests overflowed the Rainbow Room to adjoining space. The new officers and directors were formally installed at the banquet. Retiring president Al Candy, Jr., was presented with a plaque and a set of leather traveling bags. Searcy Ridge, newly installed president, spoke briefly, thanking the group for electing him and requesting their support and cooperation in the coming year.

Cleveland Salesmen Elect

E. G. MacPherson of Harshaw Chemical Co., Cleveland, was elected recently as president of the Chemical Salesmen of Cleveland. Other officers chosen were: vice-president, H. R. Baugh, Monsanto Chemical Co.; secretary, W. P. Landgrebe, Innis, Speiden & Co.; treasurer, C. H. Blazier, McKesson & Robbins, Inc. Trustees elected were: R. A. Habgreb, chemical sales division, West Virginia Pulp & Paper Co., C. A. Kleinhaus, Solvay Sales Division and R. L. Lambert, American Cyanamid Co.

New West Floor Wax

"Westwax," a new high gloss floor treatment product, was introduced recently by West Disinfecting Co., Long Island City, N. Y. A water-soluble wax which is said to dry within 20 minutes, the new "Westwax" is claimed to require no buffing or polishing. It can be used for all types of floors, and will produce a hard luster with good antislip properties, according to the company. "Westwax" is a companion product to West's "Kwykwax," which contains less carnauba than "Westwax" to reduce slipperiness. Both materials are listed by Underwriters' Laboratories, Inc., and have been approved by the Rubber Manufacturers Assn.

PRENTISS WARFARIN CONCENTRATE

PRENTISS Warfarin Concentrate,

the wonder rodenticide

for control of rats and mice,

is available in bulk for repackaging,

or for further manufacture as ready-to-use

baits. Ask for full details on this *NEW*, proven PRENTISS...

PEST-TESTED PRODUCT

PRENTISS DRUG & CHEMICAL CO., INC.

FORMERLY R. J. PRENTISS & CO., INC.

110 William St., New York 38, N. Y. • 9 So. Clinton St., Chicago 6, Ill.

CANADIAN REPRESENTATIVE: Dunn Sales, Limited, 140 St. Paul St. West, Montreal, Quebec; 146 Jarvis St., Toronto, Ontario

ANNOUNCING A NEW TECHNICAL SERVICE FOR OUR READERS

TECHNICAL PATENT GROUP-LISTS

GROUP-LIST NO. 1 IS . . .

SOAPS AND SYNTHETIC DETERGENTS

Patents are yardsticks by which technical advances in any industry are measured. Over 2,540,000 patents have been issued to date, and the Patent Office has over 120,000 more awaiting processing in 1951. Knowing the total patents in a certain classification, or in a particular sub-classification — plus main technical claims — can be a very revealing study to a technical man or woman. Soap and Sanitary Chemicals has arranged to provide certain Patent Group-Lists for its technical readers, the subject matter embracing items of wide current interest. By studying this Group-List a Research Chemist can discover new materials and methods and *today's* technical thinking on subjects in which he is vitally concerned.

The first Patent Group-List is SOAP AND SYNTHETIC DETERGENTS (SD-3). A total of 65 of the 181 patents shown have expired. Exact expiration dates of the remaining patents are given. Subject matter includes: Synthetic Detergents, 68 patents; Disinfecting and Medicated Soaps, 15; Shaving, 14; Brushless Shaving, 6; Toilet, 35; Water Softening, 4; Soap Processing, 25, etc. Technical claims on which the patent was granted are shown. Offset printed on one side only of 8½" x 11" page. Ask for Group-List SD-3.....

$5.00

OTHER GROUP-LISTS OF INTEREST TO SOAP & DETERGENT MANUFACTURERS

Synthetic Detergents No. 1..... $2

206 *expired* patents. Including Toilet Soaps, Household and Heavy Duty Cleaners, Textile Detergents, Paint and Varnish Removers, etc.

Synthetic Detergents No. 2..... $4

Over 200 patents shown. Same subject matter as foregoing. Patents show expiration dates.

(NOTE: Patents are not duplicated in these 3 Group-Lists)

Vegetable Fats and Oils, Fatty Acids, Waxes, etc. $4

Expired patents only, over 200 in all. Subjects: Bleaching of Oils; Dehydrating; Deodorizing; Extraction; Fatty Acids (63 patents shown), Oil Processing (48 Patents); Purification; Recovery; Refining; Soap Processing; Waxes, etc.

Synthetic Resins With Ion-Exchange Applications $5

The U. S. Patent Office's own compilation of USES of Synthetic Resins with Ion-Exchange Miscellaneous Applications. Complete through 1950. 166 patents with expiration dates.

Order from Technical Patents Department:

MAC NAIR-DORLAND COMPANY

254 West 31st Street New York 1, N. Y.

Bacteriologists Study QAC's

QUATERNARY ammonium compounds are effective as deodorizing, germicidal and sanitizing rinses in laundry operations, as claimed by distributors, according to a report submitted to the Society of American Bacteriologists at its 51st general meeting in Chicago, May 27 to 31. Tests conducted by U. S. D. A. research workers established, in particular, that the compounds inhibit ammonia formulation in diapers, thus preventing development of the clinical condition known as "ammonia dermatitis," or "diaper rash," alleged to result from decomposition of urea. The findings, reported to the Society by M. A. Latlief of the Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, USDA, will be of particular interest to operators of diaper service laundries.

In the study, Latlief said, a rapid urease producer, *Proteus mirabilis*, was the organism used to provide an index of the ability of quaternaries to inhibit urease production and to prevent ammonia formation. Cotton fabric, he explained, was treated with five quaternaries for five and 10 minutes, at 20 and 45° C. Three grams of cloth to 100 ml. of medicant simulated the ratio of cloth to water typical of laundry procedure. Urease test medium (BBL) was inoculated with the test bacteria prior to introduction of the treated dried samples. Ammonia production was detected by color change of phenol red in the medium.

"Results showed," Latlief stated, "that cloth exposed for five minutes to a 1:1,000 dilution of the five quaternaries at 20 to 25° C. will inhibit ammonia formation for seven days. At higher dilutions fabrics exposed at 45° C. gave more efficient inhibition than fabrics exposed to 20° C., possibly because of greater adsorption of the chemical by the cloth."

Maximum dilutions, he said further, that would delay ammonia production for 16 hours or six hours over the control with cloth treated at 20° C., ranged from 1:1,000 to 1:10,000. With cloth treated at 45° C. this dilution ranged from 1:25,000 to 1:100,000, depending upon the individual quaternary ammonium salt. Wide differences were noted among the five different quaternaries used.

In a paper on "The Effect of Nonionic Surface Active Agents on the Growth of Bacteria," Dr. Irving Millman of Armour Labs., Chicago, described a study of the effect of ten nonionic surface active agents on the growth of six organisms. The effect, he stated, depends on three variables: the concentration of the agent, the test organisms used and the incubation period. None of the agents increased growth in every concentration consistently, he stated, in summarizing findings, after outlining conditions and procedures. All of the agents decreased growth in 0.1 percent and 1.0 concentrations. Listed in the paper were the least toxic and most toxic agents as determined by the study.

A second paper on "Interaction of Surface Active Agents and Bacterial Catalase," made by the biological department of the Army Chemical Corps, was presented by Dorothy M. Molnar, of Camp Detrick, Frederick, Md. Findings were that "ionic surface active agents are inhibitory, with the anionic compounds more effective at an acid pH, and the cationic compounds at an alkaline pH." Other results were noted and possible explanations discussed.

Paul A. Wolf, of Dow Chemical Co.'s biochemical research department, reported on a study, made jointly with W. M. Westveer, of "The Relationship of Chemical Structure to Germicidal Activity, as Evidenced by Chlorinated Phenols." The study, he explained, was designed to obtain additional germicidal information on chlorophenols and results were used to correlate further the relationship of chemical structure to germicidal activity as it pertains to this type of compound.

"Our results," Mr. Wolf stated, "indicate that the germicidal activity increases as the degree of chlorination increases, up to the tetrachloro series. . . . . Overall results of the study emphasize the importance of the physical as well as chemical properties, in attempting to evaluate the relationship between germicidal activity and chemical structure."

Human poliomyelitis infection could possibly be caused by the cockroach, it was indicated in a study reported by Robert G. Fischer of the department of bacteriology, Univ. of North Dakota, Grand Forks, N. D. Joint author of the paper was Jerome T. Syerton of the same department.

◆

Beacon Wax Co. Moves

Beacon Co., producers of "Beacon Wax" moved recently from 97 Bickford St., Boston, to 33 Richdale Avenue, Cambridge 40, Mass. Both the plant and offices of Beacon Co., Beacon Wax Co., Beacon Chemical Industries, Inc., Beacon Syndicate Distributors, Inc., Beacon Wax of New York., Inc., Beacon-Boston Corp. and Beacon Service Corp. will be located in the new quarters. The telephone number is UNiversity 4-2500.

◆

William B. Ratner Dies

William B. Ratner, who operated an exterminating business in Atlantic City under his own name from 1917 until 1931, died May 13. He is survived by his wife and two sons, Herman and Sidney, who since 1931 have operated the business as Ratner Pest Control Operators at 2615 Pacific Avenue, Atlantic City. Mr. Ratner was one of the pioneers in the exterminating business.

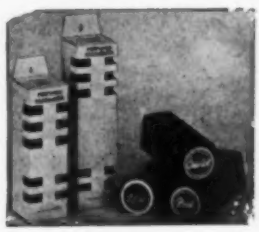
◆

Hits Insecticide Cuts

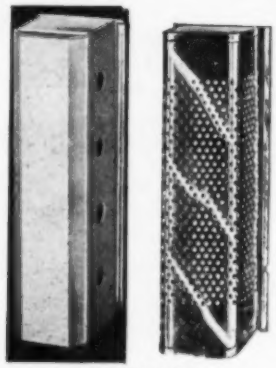
A resolution expressing grave concern over any curtailment in the production and export of insecticides . . . and related supplies and equipment required in public health programs of member governments was voted by a seven-man executive committee of the Pan American Sanitary Organization at its 13th meeting in Washington, D. C., recently. It voted to "support the efforts of the director of the bureau and the director general of the World Health Organization to gain recognition on the part of officials charged with production, allocation and export policies of the medical supply requirements of the health agencies of member governments."

NO SHORTAGES! PROMPT DELIVERY ON PARA BLOCKS and PINE DISINFECTANTS!

DEODORANTS



DEODORANT BLOCKS
WITH INDIVIDUAL
CARDBOARD CONTAINERS



CONTAINERS
HEAVY GAUGE METAL
BAKED WHITE ENAMEL FINISH

DEODORANTS

DISINFECTANTS

INERT INGREDIENT
WATER 10%

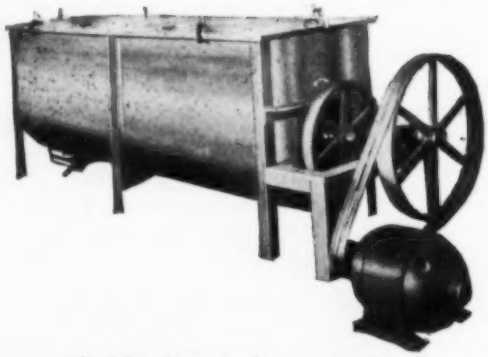
Manufacturers of Disinfectants, Deodorants, Waxes, Polishes, Soaps, Insecticides and Etc., Exclusively for the Janitor Supply Jobber.

DISTRIBUTORS OF SOAP DISPENSERS HUDSON SPRAYERS

UNCLE SAM CHEMICAL CO., Inc.
575 WEST 131st ST. *Est. 1920* NEW YORK 27, N. Y.

WRITE FOR CATALOG No. 5 AND PRICE LIST

BLENDERS and BATCH MIXERS



Ideal for: Dry powders — semi-liquids pastes — granular materials

- **Easy cleaning • Ball bearings**
- **Special design packing glands**
- **Dust tight • Leakproof • Watertight**

Also manufacturers of Agitators, Kettles, Powder and Paste Fillers, Conveyors.

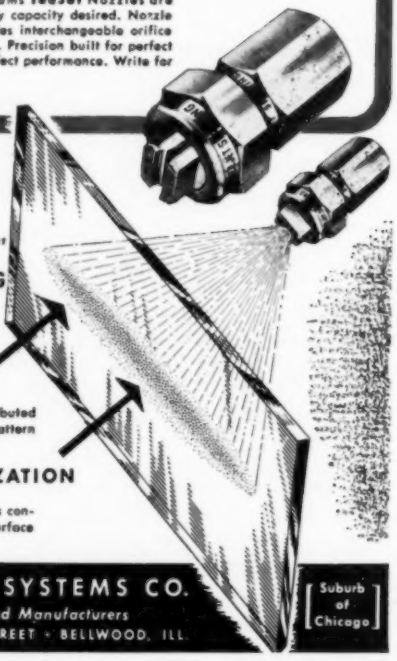
ASK FOR CATALOG 43

GEORGE G. RODGERS CO. Inc.
2401 THIRD AVE. NEW YORK 51, N. Y.

SPRAYING SYSTEMS
TeeJet
SPRAY NOZZLES

FOR
"Perfect Pattern"
RESIDUAL SPRAYING

Spraying Systems **TeeJet** Nozzles are available in any capacity desired. Nozzle assembly includes interchangeable orifice tip and strainer. Precision built for perfect pattern and perfect performance. Write for information.



TeeJet
"perfect pattern"
RESIDUAL SPRAYING

UNIFORM DISTRIBUTION
liquid particles distributed evenly over entire pattern area

PROPER ATOMIZATION
size of liquid particles controlled to adhere to surface area sprayed

SPRAYING SYSTEMS CO.
Engineers and Manufacturers
3217 RANDOLPH STREET • BELLWOOD, ILL.
[Suburb of Chicago]

C. S. M. A. Return Drum Survey

A REPORT on its survey of practices regarding returnable drums was issued recently by Chemical Specialties Manufacturers Association, New York. The object of the survey, conducted by means of a mailed questionnaire, was to determine the extent of the practice of having empty steel containers returned in times of normal supplies of steel and during steel shortages, according to H. W. Hamilton, managing director of CSMA.

More companies are requesting drums returned during the current shortage of steel than heretofore, according to the report. Of the 71 companies participating in the survey, 63 now have a drum return plan. Of the 62, 23 had a regular return system before current shortages. The other eight companies have no system of getting used drums back. Charges or deposits on the same invoice with the commodity are made by 52 of the 63 firms. Six include the drums in the price, two give separate invoices and three did not specify.

A wide variance was noted in the time allowed for the return of drums for credit: seven specify 60 days, 11 allow 90 days, two give 120 days, and the remaining 40 ranged from one year to an indefinite time.

Deposit charges range from $3.00 to $10.00 on 55 and 30 gallon drums and from $2.00 to $6.00 on 15 gallon drums. Payment by the user of return freight on drums is required by 13 companies, while 47 respondents said containers came back with freight collect, although some required these be sent in lots of three or more.

Thirty companies make no effort to identify their packages for return purposes, while those that do use numbers, special stencils, stickers or other color schemes.

On the question of inspecting returned drums, only nine said they did not do this. Sixteen firms refuse credit if packages are in poor condition, or are not capable of being reconditioned, and six give partial allowances. Thirty-seven companies give full credit regardless of the condition of the empty drums.

—— ♦ ——

Moth Products Agent

Lynn Baker, Inc., New York, was appointed recently to handle the advertising for the entire line of moth preventive products of Koppers Co., Pittsburgh.

—— ♦ ——

Grant Paint Price Relief

The alternative of a straight 15 percent increase in the price of paint, varnishes and lacquers, based on the period from April 1 through June 24, 1950, or the use of any of the price adjustment formulas of CPR-22 is permitted by Supplementary Regulation 6 to CPR-22, issued June 20 by the Office of Price Stabilization.

LABORATORY SERVICES

Peet-Grady tests

C.S.M.A. aerosol tests

Biological evaluation of agricultural insecticides

Evaluation of unknown compounds for insecticidal, fungicidal, and bactericidal properties

Phenol coefficient determinations

Chemical determination of insecticides

Warm-blooded toxicity studies

Warfarin assays by chemical and biological means

Write for details

WISCONSIN ALUMNI RESEARCH FOUNDATION

P.O. Box 2059 Madison 1, Wisconsin

OTTASEPT* ®

** Ottasept is the Ottawa Chemical Company's brand of a purer, more versatile* PCMX *(parachlorometaxylenol), produced in bulk and at a cost low enough to become the* PLUS *ingredient of your product.*

Both a germicide and a fungicide OTTASEPT *is non-toxic, non-corrosive, colorless and requires no license or new drug application when used externally.*

Add PLUS to Your Product

Ask About OTTASEPT

Phone Toledo — EMerson 1110

OTTAWA CHEMICAL CO.

823 Hamilton St., Toledo 7, Ohio

1/3 MORE INSECTICIDE AEROSOL PACKAGES

with the same amount of **FREON**

Favorably Reported by Commercial and USDA Laboratories

SOMETHING NEW IN AEROSOLS

DOUBLE ACTION FROM PROPELLANT

Technic Available — Fee and Royalty

ADVANCE PACKAGING CORP. 60 East 42nd St., NEW YORK 17, N. Y.

...another big seller for you, Mr. Jobber!

PER-MO WARFARIN

rat and mouse killer

* * *

Packed in 1 lb. and 4 lb. tin containers.

* * *

Cash in on the current active demand for WARFARIN with this effective and ready-to-use product.

ALL PER-MO PRODUCTS CAN BE PACKED UNDER YOUR OWN PRIVATE LABEL

PER-MO
STANDS THE TEST
IT'S BY FAR THE BEST

Write today. Full particulars first letter

PER-MO PRODUCTS CO.
3602-04 S. Woodland
Kansas City 3, Mo.

Model RU-120

Tops them all

resina cappers

HIGH SPEED
straight line screw capper

FLEXIBLE • FAST
FULLY AUTOMATIC

•

OTHER TYPE CAPPERS AVAILABLE

send for descriptive folder

RESINA Automatic Machinery Co., Inc.
COURT & CREAMER ST., BROOKLYN 31, NEW YORK

Sodium Hexametaphosphate
Sodium Tetraphosphate

JOHN A. CHEW
Incorporated

60 E. 42nd St. MU. 2-0993 NEW YORK CITY 17

Recess Delaney Insecticide Investigation

A STRENGTHENING of the Federal Insecticide, Fungicide and Rodenticide Act was urged by a U. S. Department of Agriculture official, the final witness appearing before the Delaney Committee, investigating chemicals in food products, June 19, before the committee recessed its hearings until fall. At the same time, it was reported that the committee might also investigate chemicals in cosmetics. Another Agriculture department witness testified that the present laws are adequate to protect consumers from possible hazards of insecticide sprays.

The hearings of the special House Committee Investigating Chemicals used in foods resumed June 6, continuing intermittently through June 21. They are expected to resume after the summer recess some time next fall and are reportedly going to be held in crop producing areas.

Urging a tighter federal act was E. L. Griffin, assistant chief of the Insecticide Division, Production and Marketing Administration, U.S.D.A., Washington. He contended that while the present law is an improvement over the 1910 Act, it still does not require manufacturers to make tests on the effectiveness and safety of their products. He also told the committee that registration "under protest" provisions of the present law are harmful, since manufacturers can demand registration of their products even though the U.S.D.A. disapproves.

Another Department of Agriculture witness, Dr. Fred C. Bishopp. of the Research Section of the Bureau of Entomology & Plant Quarantine said that instead of new laws an extensive educational campaign should be conducted to inform the public of possible dangers. He also testified that the U.S.D.A. is working "night and day" to see that no insecticide is sold without adequate testing. Dr. Bishopp also stated that he had never heard of a single death to a human being caused by DDT.

◆

Argosy Mfg. Relocates

Argosy Manufacturing Co., Kansas City janitor supply firm, recently moved from 1305 Grand Ave. to new quarters on the first floor of the building at 1335 Grand Ave. The firm is headed by A. F. Richard.

◆

New Sanitary Supply Firm

Tennessee Paper & Supply Co., Lebanon, Tenn., has been established by B. S. Rhea to engage in the distribution of sanitary supplies, equipment and paper products. For the past fourteen years, Mr. Rhea has been in the paper products business located in Dothan, Ala., transferring his business operations to Lebanon, Tenn. on July 1. He states that he is interested in receiving catalogs and other information from manufacturers regarding sanitary supplies and equipment.

Prime Green

OLIVE OIL FOOTS

— EST. 1867 —

E. M. SERGEANT PULP & CHEMICAL CO., INC.

7 DEY STREET NEW YORK 7

WOrth 2-4340

WAXES

CARNAUBA OURICURY

CANDELILLA BEESWAX

MONTAN WAX JAPAN WAX

SYNTHETICS MINERAL WAXES

HANS TOBEASON, Inc.

33 Rector Street New York 6, N. Y.

WHitehall 4-3480

Direct Importers & Distributors

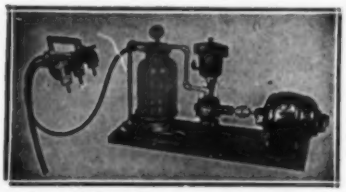
BOTTLING OPERATIONS SIMPLIFIED

"SCIENTIFIC"

PORTABLE

VACUUM FILLER

Fills directly from drum, pail or demijohn; no overhead tanks required. Suitable for bench or tray work; also fills containers in original shipping cartons.



FOR perfumes
to nail polish
meat sauces
to silver polish

FOR Pharmaceuticals, Extracts, Syrups, Beverages, Wines, Whiskies, Insecticides, Washing Fluids, Chemicals, etc.

FILLS vials to gallons: all cans up to quarts. Our many years of "Know-How" at your disposal in making special filling handles for every shape of container, every type of liquid. Quick change-overs. Cleans itself automatically in 5 minutes.

LOW PRICED BENCH AND STAND MODELS AVAILABLE; ALSO SEMI-AUTOMATIC STRAIGHT LINE, FILLERS.

ACTUALLY PAYS FOR ITSELF IN A FEW WEEKS!

WRITE FOR FREE TRIAL OFFER

SCIENTIFIC FILTER CO.

mfrs. Filters; Filling, Capping, Labeling Mchry.

59 ROSE STREET, NEW YORK CITY 7, N. Y.

CERTIFIED COLORS

A broad range of shades for Shampoos, Soaps, Drugs, Medicines, Creams, Rinses, and Cosmetics.

PYLA-SYNTH COLORS

Fast colors for the New Synthetic Detergents in Red, Blue, Green, Amber and Yellow.

- *We offer a full line of fast colors for all soap and soap products.*
- Send for free samples.
  Send for price lists.

PYLAM PRODUCTS CO., INC.

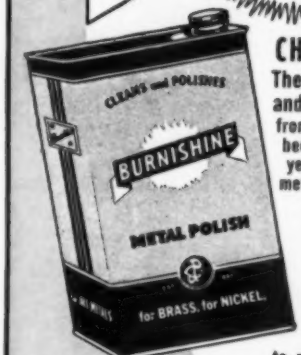
Manufacturing Chemists, Importers, Exporters

799 Greenwich St. New York City 14

Cable Address "Pylamco"

it's BURNISHINE

SINCE 1887



CHROME METAL POLISH

The original Liquid Metal Polish and the standard of comparison from which metal polishes have been judged for more than 65 years. BURNISHINE polishes all metals and produces a brilliant and lasting luster. Contains no acids, ammonia, harsh abrasives or anything injurious to the finest metals. Harmless to the hands.

Recommended for stainless steel, aluminum, monel and such metals that are difficult to polish. Removes rust from Chromium and nickel plated metals. Polishes brass, copper, bronze quickly and easily.

Sanitation Material for: INSTITUTIONS, HOTEL, RESTAURANT and BAR SUPPLY HOUSES

WRITE FOR NEW CATALOG
Just off the press

J. C. PAUL & CO.

928-934 ROSCOE ST. CHICAGO 13, ILLINOIS

INDUSTRIAL CHEMISTRY

5th Edition

By E. Raymond Riegel,
Professor of Industrial Chemistry,
University of Buffalo

IN the enormous task of revising this famous text, the author has left no stone unturned to make this new edition the most complete, informative, accurate and readable survey of the whole field of industrial chemistry that has ever been offered to the English-speaking world. Now more than a thousand pages of text and illustrations, it covers the plants, equipment, machinery, materials and processes in over fifty chemical and process industries.

"Industrial Chemistry" is a valuable reference book for chemical technologists and specialists, who will reach for it to learn what is going on in other broad chemical fields where ready access to new and outstanding developments is needed.

1,020 pages 350 illustrations $7.50

Send Check with Order

Mac Nair-Dorland Company

254 West 31st Street New York 1, N. Y.

Add 3% Sales Tax if in New York City

PROFESSIONAL DIRECTORY

Chemical Engineers

Contracting — Consulting

Complete Plants and Engineering Services for:
Glycerine — Fats and Oils
Soaps — Hydrogenation
Fatty Acids — Hydrogen

Research, Reports, Investigations

WURSTER & SANGER, INC.

52nd Street and S. Kenwood Avenue
Chicago 15, Illinois

E. G. THOMSSEN, Ph.D.

•

Consultant on plant lay-out equipment design and product formulation for manufacturers of insecticides, disinfectants, floor waxes, soaps and allied products.

•

306 Center St., Winona, Minn.

POWDER MIXING

Soaps — Alkalis — Detergents

carefully compounded
according to your own
specifications

LABORATORY FACILITIES
WAREHOUSING
SHIPPING

Tex-ite Products Co.

217 Havemeyer St., Brooklyn 11, N. Y.
Tel. EV. 7-1862

TESTFABRICS

Incorporated
224 West 35th Street
New York 1, N. Y.

Manufacturer and distributor of
Cotton Soil Testcloth #26. Spec 51S-47 (INT) Bureau of Ships. Wool Testcloth same formula. 5-gram cotton skeins for wetting out tests, individually adjusted to ± 2% as per ASTM and AATCC standard.

STILLWELL AND GLADDING, INC.

ANALYTICAL & CONSULTING CHEMISTS
Over 80 years

SPECIALIZING IN ANALYSIS
of
Rotenone Bearing Materials, Pyrethrum Flowers and Extracts, Soaps, Detergents, Insecticides, Waxes and Chemicals.

130 Cedar Street
New York 6, N. Y.

FOSTER D. SNELL INC.

RESEARCH
CONSULTANTS
To the Soap and Chemical Industries.
Send for copy of "Surface Activity and Detergency."

Chemists — Engineers

29 W 15 St. New York 11, N.Y. WA 4-8800

SKINNER & SHERMAN, INC.

246 Stuart Street, Boston16, Mass.

Bacteriologists and Chemists

General Bacteriological Tests.

Chemical Analyses for Industry.

F. D. A. Tests of Disinfectants, Antiseptics, and Fungicides.

Efficiency Tests of Sanitizing Agents and Procedures, etc.

MOLNAR LABORATORIES

Consulting, Testing and Research

Specializing in

Organic Synthesis
Product Development and Control
Disinfectant Testing and Formulation
Toxicity and Dermatitis Tests
Clinical Studies

Member A. C. C. & C. E.

211 E. 19th St., New York 3, N. Y.

C. C. McDONNELL, D.Sc.

Formerly Chief Insecticide Division, Production and Marketing Administration, U. S. Department of Agriculture

CONSULTANT

Insecticides, Fungicides, Disinfectants, Rodenticides, Weed Killers, Formulas, labeling, advertising and registration under the Federal Insecticide, Fungicide, and Rodenticide Act. Represent manufacturers at hearings before the Department of Agriculture.

122 Hesketh Street, Chevy Chase 15, Md.

J. W. McCutcheon

475 Fifth Avenue — New York 17
MU. 3-3421

Consulting Chemist

Specializing in
oils, fats, soaps synthetic detergents and glycerine

Laboratory: 367 E. 143 St., New York 54, N. Y.
ME. 5-4298

ALAN PORTER LEE, Inc.

Contracting & Consulting Engineers

Design and Construction of Equipment and Plants for Producing and Processing Fats, Oils, Soaps and Related Products.

81 Miller Rd., Morristown, N. J.

Cable Address: "ALPORTLE," Morristown, N.J.

LANCASTER, ALLWINE & ROMMEL

Registered Patent Attorneys
Suite 402, 815 - 15th St., N. W.
Washington 5, D. C.

•

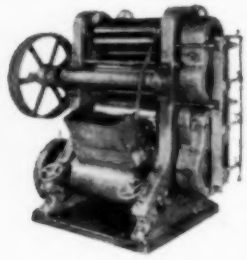
Practice before U. S. Patent Office. Validity and Infringement Investigations and Opinions.
Booklet and form "Evidence of Conception" forwarded upon request.

Special Offerings of

SOAP MACHINERY

Completely Rebuilt

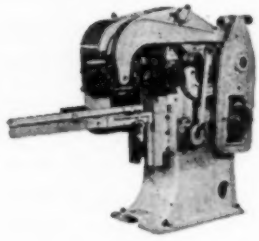
All used equipment rebuilt in our own shops
Guaranteed to be in first class condition



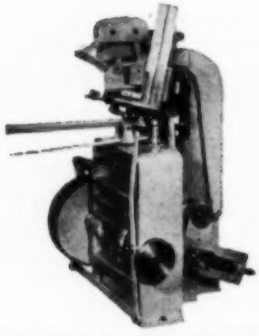
TOILET SOAP MILLS
3 Roll—4 Roll—5 Roll
STEEL and Granite Rolls

Newman's, BRAND NEW
Steel Steam Jacketed
SOAP CRUTCHERS
Sizes 1,000 to 10,000 lbs.

JONES Horizontal Type AUTOMATIC combination laundry and toilet soap presses. Single or Double Kick.



Single screw soap plodders with 6, 8, 10 or 12 inch screws
All completely rebuilt and unconditionally guaranteed.



JONES Vertical Type AUTOMATIC Toilet Soap Press.

SPECIAL BARGAIN

P & S SOAP CHIP DRYER — 5 Fan — 3 Screen — Apron 5 Roll or 2 Roll Set heating coils — excellent condition cheap — for prompt delivery.

ADDITIONAL REBUILT SOAP MACHINERY

H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacket Crutchers.
Dopp Steam Jacketed Crutchers. 1000, 1200, 1500 lbs. and 800 gals. capacity.
Ralston Automatic Soap Presses.
Scouring Soap Presses.
Empire State, Dopp & Crosby Foot Presses.
2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
H-A 4 and 5 roll Steel Mills.
H-A Automatic and Hand-Power slabbers.
Proctor & Schwartz Bar Soap Dryers.
Blanchard No. 10-A and No. 14 Soap Powder Mills.
J. H. Day Jaw Soap Crusher.
H-A 6, 8 and 10 inch Single Screw Plodders.
Allbright-Nell 10 inch Plodders.
Filling and Weighing Machine for Flakes, Powders, etc.
Steel Soap frames, all sizes.
Steam Jacketed Soap Remelters.
Automatic Soap Wrapping Machines.
Glycerin Evaporators, Pumps.
Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
Perrin 18 inch Filter Press with Jacketed Plates.
Gedge-Gray Mixers, 20 to 6000 lbs. capacity, with and without Sifter Tops.
Day Grinding and Sifting Machinery.
Schultz-O'Neill Mills.
Day Pony Mixers.
Gardiner Sifter and Mixer.
Proctor & Schwartz large roll Soap Chip Dryers complete.
Dopp Steam Jacketed Soap crutchers, 1000, 1200 and 1350 lbs. capacity.
Day Talcum Powder Mixers.
All types and sizes—Tanks and Kettles.
Ralston and H-A Automatic Cutting Tables.
Soap Dies for Foot and Automatic Presses.
Broughton Soap Powder Mixers.
Williams Crusher and Pulverizer.
National Filling and Weighing Machines.

Send us a list of your surplus equipment—we buy separate units or complete plants.

NEWMAN TALLOW & SOAP MACHINERY COMPANY

1051-59 West 35th St., Chicago 9, Ill. Phone Yards 7-3665; 7-3666

Our Fifty Years of Soap Experience Can Help Solve Your Problems

HOCHSTADTER LABORATORIES
INC.
128 Water Street New York City 5
Specializing in analysis, research and formula development for manufacturers of
Soaps Detergents
Waxes Polishes

CLASSIFIED

Classified Advertising — All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap & Sanitary Chemicals*, 254 West 31st St., New York 1.

Positions Open

Chemist wanted by Conn. sanitary chemical mfr. Must have many years of experience in this field, and specific formulae for mfg. of waxes, soaps and sanitary specialties. Will consider man now employed who will offer his services in spare time. Address Box 378, c/o *Soap*.

Vice-President and Production Manager, chemical manufacturing concern $15,000 plus bonus. Buyer —chemicals $10,000 plus bonus. Research chemist—new product development, sales-minded—$10-$15,000 Under 40—heavy industrial experience. Submit complete resume and photo. Walker Employment Service, 537 NW Bank Building, Minneapolis 2, Minn.

Kettle Man Wanted: Steady position old established firm. Located Pacific Northwest. Give all information your first letter. Address Box 379, c/o *Soap*.

Salesman Wanted for prominent line of liquid soap dispensers for jobbing trade. Give full details in your first letter. Address Box 380, c/o *Soap*.

Manufacturer's Representatives for prominent line of industrial brushes to jobbing trade. Give full details in first letter. Address Box 381, c/o *Soap*.

Positions Wanted

Chemical Executive: Will introduce new specialty products and carry them through research, development, market analysis, and production. Chemist - Chemical Engineer, Ph.D. Age 33. Industrial research and development experience. Salary $10,000. Address Box 382, c/o *Soap*.

Production Manager with long experience in pharmaceuticals and sanitary products. Expert in formulations, can handle all kinds of manufacturing and packaging. Competent to handle male and female help. Address Box 383, c/o *Soap*.

Graduate Chemical Engineer experienced in high speed production of packages for retail trade. Wants position as plant or production manager. Capable, reliable, bondable. Address Box 384, c/o *Soap*.

Consulting Chemist, experience with sanitary chemicals, paint specialties, automotive compounds, aerosol sprays, dry cleaning compounds, soaps, waxes, other chemical specialties. Address Box 385, c/o *Soap*.

Chemist — B.S., M.S., 6 years experience in production, research and development of sanitary specialties, floor waxes, polishes, cleaners, etc. Complete knowledge of all phases of waxes. Desire West Coast, preferably Los Angeles area. Address Box 386, c/o *Soap*.

Miscellaneous

Soap Plant Wanted: We are now manufacturing over $20,000,000 in various lines and wish to expand by acquisition of assets or stock of one or more industrial companies. In our negotiations the seller's problems and wishes will receive full consideration. Present personnel will normally be retained. Address all replies "Confidential." C. J. Gale, Sec., 233 Broadway, N. Y. 7, N. Y. BA 7-1819.

Flaker Wanted Immediately: Single drum flaker, stainless steel or chrome plated, preferably 48x40", with internal cooling and heated feed pan, variable speed motor drive. Address Box 387, c/o *Soap*.

Wanted: Rebuilt centrifugal pump — 4" inlet — must be guaranteed in good condition and reasonably priced. Address Box 388, c/o *Soap*.

ALVIN J. COX, Ph.D.
Chemical Engineer and Chemist
(Formerly Director of Science, Government of the Philippine Islands; Retired Chief, Bureau of Chemistry, State of California Department of Agriculture.)
ADVISOR ON AGRICULTURAL CHEMICAL PROBLEMS AND INVESTIGATIONS
Consultant in reference to spray injury and damage claims including imports of fruits and nuts, formulas, labeling, advertising and compliance with law.
1118 EMERSON STREET
PALO ALTO, CALIFORNIA

New Product Available—Dust absorber—absorber dust and lint. Doesn't stain. Ideal for dust mops and cloths. Makes waxed floors gleam; restores beauty of woodwork. S. Parlee Co., 829 Ft. Wayne Ave., Indianapolis 2, Ind.

Urgently Wanted: Caustic soda, soda ash, other alkalies, phosphates, glycols, ethanolamines, cellosolves, naphthalene, para, DDT. Other raw materials. Chemical Service Corp., 92-06 Beaver St., New York 5, N. Y. Tel.: HAnover 2-6970.

Wanted: Complete soap or sanitary chemical plants. Also individual items such as crutchers, plodders, mills, mixers, presses, dryers, filling equipment, etc. R. Gelb & Sons, Inc., State Highway No. 29, Union, N. J.

Will purchase Immediately: Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box 389, c/o *Soap*.

Will Buy: Caustic soda, soda ash, trisodium phosphate, tetrasodium-pyrophosphate, tripolyphosphate, solvents, DDT, copper sulfate, paradichlorbenzene, napthalene, other materials. Offers and inquiries invited. Tobey Chemical Company, 1480 Broadway, New York 18.

For Sale

For Sale: New, never used double-drum grain dryer — capacity 375 lbs. of wet yeast per hour, complete with flaker, conveyors, gauges, steam trap, and extra set of knives; all electrical equipment, 60 cycle, 220/ 3-phase AC; still in original crates, never used. Immediate delivery. Address Box 391, c/o *Soap*.

For Sale: New 1500# Soap crutcher; cutting table; Jones press; wrapper type S:3000# crutcher motorized 3&5 roll mills; dryer; other

SHELLAC

direct from our own private sources

ORANGE • BUTTON

high grades • wax free • garnet

SIAMLAC: high flow, long life

BLEACHED

regular • refined

WAXES

CARNAUBA • CANDELILLA
JAPAN • BEES
HIGH M. P. SYNTHETIC

WM. DIEHL & CO.

334 W. 42nd St., New York 18, N. Y.

Cable: DIEHLWILL BRyant 9-5211

There Is No

RESEARCH MANPOWER SHORTAGE

When You Put Your Problems Up To

SNELL RESEARCH LABORATORIES

Scientific Personnel
Vast Cumulative Experience
10 Floors of Laboratories with exacting, precision equipment

From A (for acids) to Z (for zymology) we're at your service, including evaluation, formulation, processing and packaging.

Problem Inquiries Cordially Invited

FOSTER D. SNELL INC.
CHEMISTS AND ENGINEERS
29 WEST 15th ST. NEW YORK 11, N.Y.
PHONE WATKINS 4-8800

CUT YOUR COSTS

ON

AEROSOL

PACKAGING of INSECTICIDES, PAINTS, PERFUMES and Other Products—

WE SPECIALIZE IN SHORT RUN PRODUCTION

Private label operators will find it to their advantage to investigate our facilities for contract filling, research and development. The first Aerosol type container ever made was developed by a member of our staff. We manufacture Aerosol valves for a wide variety of applications and containers and also have a stock supply of containers. We can fill containers using any specified valve.

Prompt service and complete satisfaction assured. We have the equipment and experience to give you just what you need at the price you want to pay.

INQUIRIES INVITED

Tell us in detail of your requirements and we will gladly quote and offer recommendations.

THE RONOR CORP.

1360 WEST 9th ST. CLEVELAND 13, OHIO

This compact text on soapmaking in India, as prepared from the personal experiences of the author, covers soapmaking principles and manufacturing technique. This text is published in India.

Soapmaking

The Principles and Processes

by R. L. Datta, D.Sc.

CONTENTS

Chemistry of Soapmaking
Chemical Raw Materials
Fatty Raw Materials
Hardness Number and Charge Computing for Soap
Saponification
Washing Soap by the Grained Process
Semi-boiled, Soft and Liquid Soaps
Cold Process Soap
Soap Detergency
Perfuming Washing Soap

143 Pages **$3.50 in U.S.A.**

Send Check with Order

MAC NAIR-DORLAND CO.
254 West 31st Street
New York 1, N. Y.

Add 3% sales tax if in New York City

For Sale

soap machy. I. E. Newman, 5602 Blackstone Ave., Chicago, Ill.

For Sale: New 1500 pound jacketed soap crutcher. Contact Mr. Newman, Loeb Equipment Supply Co., 1923 W. N. Ave., Chicago 22.

For Sale: Established complete soap plant, in operation, Midwest, capacity approximately 3½ million lbs. Address Box 392, c/o *Soap*.

For Sale: 1-Newman-4000 lb. cap. steam jacketed soap crutcher —complete with 10 H.P. motor excellent condition. West coast location. Address Box 393, c/o *Soap*.

For Sale: Mixing machinery, pumps, storage and mix tanks, agitators, scales, motors (new and used). Plant Equipment Co., Cincinnati 3.

For Sale: Horizontal Ribbon Type Powder Mixers: J. H. Day 50#, 100#, 200#, 600# and 800#: Robinson 5000#. Read 600# Jacketed. Broughton 2000# mixer. Large stock stainless steel tanks and jacketed kettles. Perry Equipment Corp., 1510 W. Thompson St., Phila. 21, Pa.

For Sale: 5000 lb. Houchin vertical Jacketed Crutcher motor driven. Empire State Foot Presses. Soap Frames. Allbright-Nell 4'x9' chilling rolls. Lehmann 4 roll W. C. 12"x 36" steel mill. Houchin 8½"x16" 3 roll and 18"x30" 4 roll Granite Stone Mills. Anderson No. 1 and Duo Expellers. Kettles and Tanks, iron, copper, aluminum, and stainless. Dryers vac. & atoms. Jones automatic soap presses. Automatic soap chip dryer. Slabbers & cutting tables, hand & power. Crutchers. Blanchard No. 14 soap powder mill. 6 knife chipper. Filter presses 12" to 42".

For Sale

Wrapping & sealing machines. Powder, paste & liquid mixers. Rotex sifters. Filling machines. Grinders: Hammer mills. Colloid mills. Three roll steel mills, 6"x14", 8"x22", 9"x32", 12"x30", & 16"x40". Portable elec. agitators, pumps, etc. Send for bulletin. We buy your surplus equipment. Stein Equipment Co., 90 West St., New York 6, N. Y. WOrth 2-5745.

For Sale: Glass enamel lined tanks — 1,200,000 gallons Pfaudler glass enamel lined tanks — 122 tanks all told, 10'6" O.D., linings, like new, immediate delivery, located Buffalo and New York areas — copper hot water tanks; Sweetland filter; 15,000 gal. kettle, of Everdur construction, new-never used; Klein and Niagara stainless steel filters; York double-pipe coolers, 12' long, 12 pipes high; 2—York 10x10 twin-cylinder, closed-type, single-acting, ammonia compressors, 70 ton capacity, direct connected to Westinghouse 125 H.P., synchronous motors, complete with condensers and all equipment still erected in brewery which we are dismantling; Ingersoll-Rand and Nash air compressors (5); miscellaneous other equipment — write for complete list and tell us your requirements — no obligation. Chas. S. Jacobowitz Co., 2030 Main St., Buffalo 14, N. Y. Phone AMherst 2100.

For Sale: 50 one-piece steel tanks for sale — immediate delivery on 50 steel tanks; approximate capacity 5000 gal. each; dished heads, manholes, adjustable legs, fittings; still erected as last used, and may be inspected and shipped immediately. Address Box 390 c/o *Soap*.

For Sale

For Sale: Munson 2000 lb. Rotary Batch Mixer; P&S 4 Sect. Soap Chip Dryer; 100 lb. jacketed soap crutcher; 7 Day No. 71 S/S Roball Sifters; Size 11, 23, 43 and 53 Rotex screens; Dopp 350, 650 gal. jacketed, open kettles; Sperry 36" plate & frame filter press, 24 chambers; Sperry 30" aluminum P & F filter press; Sparkler S/S 18-S-12 Jacketed Filter, with pump & motor; Jones Automatic "K" and "ET" soap presses; Empire State Para Block Press; Mikro No. 1 & No. 2 Pulverizers; Blanchard No. 10 soap powder mill; Blaw-Knox 6'x4' Chrome-piated chilling roll; 2 Wolf 1800 lb. and 1 Stokes 600 lb. Ribbon Blenders; 38-Aluminum storage tanks, 800, 600 & 250 gals.; Special—27 unused rectangular 200 gal. aluminum storage tanks at only $75 each plus $15 crating. Only a partial list. Send us your inquiries. Consolidated Products Co., Inc., 15-21 Park Row, New York 38, N. Y. Phone BArclay 7-0600.

Wax Additives

(*From Page* 155)

1. Weight of residue compared to normal weights of extract; 2. Acid number; 3. Saponification number; 4. Special tests, as concentrated sulfuric acid extraction to indicate paraffins.

Bibliography

(1) Schuette, H. A. and Baldinus, J. G., "Studies on Candelilla Wax," *J.A.O.C.S., 26*, no. 10, p. 530 (1949).
(2) Hanson, N. W., *Paint, Oil and Chemical Review*, p. 47, Feb. 16, 1950.
(3) Worth, A., "The Chemistry and Technology of Waxes," Reinhold Publishing Co., (1947).

LATE - TYPE
Guaranteed - Rebuilt
MACHINERY

UNION Rebuilt Machinery
Established 1912

International Stainless Steel Straightline 160 per min. Vacuum Filler.
Resina Model S and LC Automatic Cappers.
Chisholm Ryder MH New Way Wraparound Labeler.

Mikro 4TH, 2TH, 1SH Pulverizers; Jay Bee and Schutz O'Neill Mills.
Pony Mixers—40, 15 and 8 gallon capacities.
Stokes, Baker Perkins BB and Readco, Day, Hottman Mixers.
B.P. Jumbo type 3500 gal. Steam Jacketed Double Arm Sigma Mixer.
Day & Robinson 100 up to 4000 lbs. Powder Mixers and Sifters.

IMMEDIATE DELIVERIES — 5000 MACHINES IN STOCK
Write or Wire Us Collect All Your Requirements

At Real Low Prices

R. A. Jones Model E Automatic Soap Press, ½ to 4½ oz. cakes.
Three Roll 16" x 40" Porcelain Roller Mill.
Houchin Aiken and National Equipment 3 to 5 Roll Soap Mills.
Stokes and Smith G1, G2 and HG88 Auger Powder Fillers.
Stokes 90D Automatic Tube Filler and Closer.
Stokes 2C Tube and Jar Cream Filler and Tube Closer.
Filler 1, 2, 4 and 8 Head Stainless Steel Automatic Piston Fillers.
Pony ML and MX Labelrites; Ermold and World Semi-Automatic and Fully Automatic Rotary and Straightaway Labelers.
Standard Knapp No. 429 Carton Sealer; Jones & Ceco Carton Sealers.
Hayssen 3-7 Package Machinery FA2Q, CA2, DF, Scandia SFC Wrappers.

Union **STANDARD EQUIPMENT CO.**
318-322 LAFAYETTE ST., NEW YORK 12, N.Y.

Tamms SILICA
Soft Amorphous Type

Grades to meet various abrasive requirements . . . for all kinds of metal polishes.

Tamms TRIPOLI
Rose and Cream Colors

Once-ground, double-ground and air-float — ideal grades for buffing and polishing. Also rubbing compounds.

Preferred for POLISHES!

Tamms

Tamms products are widely used in the polish trade, preferred for quality results. Write today for prices and samples.

Tamms MULTI-CEL
Diatomaceous Earth

Top grade, ground extremely fine. A milder abrasive than silica. Best for silver polish.

Tamms BENTONITE
(Suspension Medium)

Very finely-ground colloidal clay. Wholly soluble — absorbs 5 times its weight in water.

Dept. RM-3, TAMMS INDUSTRIES, Inc., 228 N. La Salle Street, Chicago 1
Formerly TAMMS SILICA COMPANY

WAXES

CARNAUBA — OURICURY
CANDELILLA — BEESWAX

Crude — Refined — Bleached

Wessel, Duval & Co., Inc.

IMPORT - EXPORT

Since 1825

67 Broad Street — New York 4, N. Y.

Telephone: WHitehall 3-9600

A GREAT MARKET AWAITS ELECTROFLY

THE STREAMLINED "DEATH-TO-FLIES"

Electrofly

CONTROLS FLIES AND INSECTS, SAFELY

The amazing, time-tested ELECTROFLY is ready for the jobbing trade. Write for franchise in your territory. ELECTROFLY is a mechanism that automatically vaporizes a new potent (yet harmless, to foods and humans) insecticide that destroys flies, mosquitoes, gnats and other pests by simply plugging in any electric socket. No labor, no mess! Results are astounding. A great market awaits ELECTROFLY. Restaurants, dairies, stores, slaughter houses, bakeries and hundreds of others. Send today for complete data and illustrated folder. Shipments made in order they are received, due to scarcity of materials.

Utica Sanitary Specialties, Inc., Dept. T
ORISKANY BOULEVARD, WHITESBORO, N. Y.

1/3 MORE INSECTICIDE AEROSOL PACKAGES

with the same amount of **FREON**

Favorably Reported by Commercial and USDA Laboratories

SOMETHING NEW IN AEROSOLS

DOUBLE ACTION FROM PROPELLANT

Technic Available — Fee and Royalty

ADVANCE PACKAGING CORP. 60 East 42nd St., NEW YORK 17, N. Y.

INDEX TO ADVERTISERS

*For further details see announcement in 1951 SOAP BLUE BOOK

Advance Packaging Corp. 154, 162
Agri-Indus Mfg. Co. 90
Albert Albek, Inc. 92
Allied Block Chemicals Co. ..... June
*American-British Chemical Supplies 90
American Can Co. ..... June
American-Standard Mfg. Co. 144
*A-M-R Chemical Co. ..... June
Antara Products Division 54
Archer-Daniels-Midland Co. ..... June
*Armour & Co. 103
Arnold, Hoffman & Co. 92
*Aromatic Products, Inc. 132
*Atlantic Refining Co. 80
Atlas Powder Co. ..... June

*Baird & McGuire, Inc. 112
*Bersworth Chemical Co. 88
*Bobrick Mfg. Corp. ..... June
*Bowen Engineering, Inc. 86
Buckingham Wax Co. ..... June
Bush Aromatics Division 18B

Calco Chemical Division ..... June
*California Spray-Chemical Corp. 134
Calmar Co. 9, 144
*Candy & Co., Inc. 10
Carbide & Carbon Chemicals Co., A Division of Union Carbide & Carbon Corp. 72
Cardinal Chemical Corp. 101
*Chemical Service of Baltimore 17
Chemical Specialties Manufacturers Assoc. 108
John A. Chew, Inc. 154
Charles B. Chrystal Co. ..... June
*Clifton Chemical Co. ..... June
Commercial Solvents Corp. ..... June
Compagnie Parento ..... June
*Concord Chemical Co. ..... June
Consolidated Packing Machy. Corp. June
*Continental Can Co. 104
Cowles Chemical Co. 60
Alvin J. Cox 159
*Crown Can Co. ..... June

*Davies-Young Soap Co. 13
Davison Publishing Co. 96
*William Diehl & Co. 160
*Dodge & Olcott, Inc. 107
*Dow Chemical Co. 18B, 23
E. F. Drew & Co., Inc. ..... June
*P. R. Dreyer, Inc. ..... June
*E. I. du Pont de Nemours & Co. 109, 110
Durez Plastics & Chemicals, Inc. 102

Elkay Products Co. ..... June
Emery Industries 16

Federal Tool Corp. ..... June
*Federal Varnish Div. 140
Felton Chemical Co. 20, 120
Filtrol Corp. ..... June
*Fine Organics, Inc. ..... June
*Fritzsche Brothers, Inc. 46
*Fuld Brothers, Inc. 3

Robert Gair Co. ..... June
*R. Gesell, Inc. ..... June

*Givaudan-Delawanna, Inc. 58
Glyco Products Co., Inc. 42
A. Gross & Co. 22

*Haag Laboratories ..... June
*Hardesty Co., W. C. 18
Warren Haviland Corp. ..... June
*Hercules Powder Co. 18C
Hochstadter Lab. 159
*Hooker Electrochemical Co. ..... June
*Houchin Machinery Co. 78
*Hysan Products Co. 7

Inland Steel Container Co. 94
Innis, Speiden & Co. ..... June

R. A. Jones & Co. 24

*Kay-Fries Chemicals, Inc. 90
Kiefer Machine Co., The Karl 82
*Kinetic Chemicals Division 109
Koppers Company 146
Kranich Soap Co. 99

*Lancaster, Allwine & Rommell 157
*Alan Porter Lee 157
*J. M. Lehman Co. ..... June
*Geo. Lueders & Co. ..... June

A. R. Maas Chemical Co. 14
*Magnus, Mabee & Reynard, Inc. 100
*N. I. Malmstrom & Co. 19
Mantrose Corp. ..... June
Maryland Glass Corp. ..... June
Mathieson Chemical Corp. 56
Maywood Chemical Works 62
J. M. McCutcheon 157
C. C. McDonnell 157
*McLaughlin Gormley King Co. 105
*Michel & Co., Inc. ..... June
Mione Manufacturing Co. ..... June
Molnar Laboratories 157
Monsanto Chemical Co. 4, 8, 48
*Moore Bros. Co. 140
*M R M Co., Inc. 88

*National Aniline Divisions 53
*National Milling & Chemical Co. 142
*Naugatuck Aromatics Div. ..... June
*Newman Tallow & Soap Machinery Co. 158
Newport Industries, Inc. ..... June
*Niagara Alkali Co. 18A
*Ninol Laboratories 73
*Norda Essential Oil & Chemical Co., 2nd cover

*Onyx Oil & Chemical Co. 106
*Orbis Products Corp. 50
*Oronite Chemical Co. 71
Ottawa Chemical Co. 153
Owens-Illinois Glass Co. ..... June

J. C. Paul & Co. 156
*Peck's Products Co. ..... June
S. B. Penick & Co. ..... June
Pennsylvania Industrial Chemical Corp. ..... June
*Pennsylvania Refining Co. ..... June
Per-Mo Products Co. 154
*Petrolite Corp. ..... June
Philadelphia Quartz Co. 64
*Polak's Frutal Works ..... June
*Potdevin Machine Co. ..... June
*Prentiss Drug & Chemical Co., Inc. 150
*Proctor & Schwartz, Inc. ..... June
*Pylam Products Co. 156

Resina Auto. Machinery Co., Inc. 154
Rodgers Co., Inc., George G. 152
*Rohm & Haas Co. 6
Ronor Corp., The 160
*Roubechez, Inc. 96
Roure-Dupont, Inc. 70

*Schimmel & Co. 74
Scientific Filter Company 156
Seil, Putt & Rusby ..... June
E. M. Sergeant Pulp & Chem. Co. 155
Sharp Brothers ..... June
Shell Chemical Corp. 51
*Skinner & Sherman 157
*Foster D. Snell 157, 160
*Solvay Sales Division 21, 84
*Spraying Systems Co. 152
*Sterwin Chemicals Co. 130
Stillwell & Gladding 157
*Stokes & Smith Co. ..... June

Tamms Industries, Inc. 162
Testfabrics 157
Tetco Company 138
*E. G. Thomssen 157
Tobeason, Inc., Hans 155
*Tombarel Products Co. ..... June
Trio Chemical Works 146
*Joseph Turner & Co. ..... June

*Ultra Chemical Works 76
*Uncle Sam Chemical Co., Inc. 152
*Ungerer & Co. ..... 3rd Cover
Union Bag & Paper Corp. 86
Union Carbide & Carbon Corp., Carbide & Carbon Chemicals Co. 72
Union Standard Equipment Co. 161
U. S. Bottlers, Machy. Co. 94
*U. S. Industrial Chemicals, Inc. 124
Utica Sanitary Specialties 162

*Van Ameringen-Haebler, Inc. 18D, 128
R. T. Vanderbilt Co. ..... June
*James Varley & Sons ..... 4th Cover
*Velsicol Corp. 111, 136
*Verona Chemical Co. 12

*Warwick Wax Co., Inc. ..... June
*T. F. Washburn Co. 148
*Welch, Holme & Clark Co. 66
Wessel, Duval & Co., Inc. 162
*Westvaco Chemical Division 11
*Wisconsin Alumni Research Foundation 153
*Woburn Chemical Corp. 15
*Wurster & Sanger, Inc. 157
*Wyandotte Chemicals Corp. 44, 68

Every effort is made to keep this index free of errors, but no responsibility is assumed for any omissions.

TALE ENDS

JUDGING from the number of empty soap dispensers which we are now encountering in wash rooms, the war effort once again is complicating the help problem. Who wants to go around filling soap dispensers when he can loaf somewhere else at twice the pay?

* * *

A gift bowl of shaving soap was the prize for each member of the winning team in a recent tug-of-war contest held in connection with Empire Day sports events at Mombasa, Kenya Colony, East Africa. The winning team was composed of giant bearded Sikh soldiers whose religion forbids them to shave.

* * *

One house organ doing an excellent job in the sanitary products field today is "The Clean-Up" put out by C. B. Dolge Co. of Westport, Conn. for its customers. It is full of all sorts of interesting and useful facts on cleaning, sanitation, etc. It also carries some other items of note. For example, from its last issue we learn that baked spare ribs are the favorite Christmas dish in Norway, that less chewing tobacco is being chawed today than 25 years ago, and the best test for drunkedness is to make the victim take off his pants standing up, the idea being that if he is plastered he will fall on his face. Very interesting, interesting indeed.

* * *

Last month, Mary Martin, star of "South Pacific," played her 900th and last performance in the New York run of the fabulous musical. In every one of the 900 performances, she shampooed her hair on stage while singing "I'm Gonna Wash that Man Right Outa My Hair." After a six-month rest, Mary will resume playing "South Pacific" in London, and the shampooing will start all over again. We wonder how her hair is standing up. After all, 900 shampoos in a little over two years are a lot of shampoos.

* * *

When these under-arm deodorant advertisers on television bespeak the merits of their products and state that their use will "keep you safe" for three or four days, we wonder what would happen if one washed with soap and water during this crucial "safe" period. Does this break the charm?

* * *

Soap manufacture in America del Sud continues to expand apace. Lever has started to manufacture "Lux" in Caracas, Venezuela. Remember the days back yonder when Reuter's had practically a monopoly of the fine toilet soap market in Latin America?

* * *

While a loud-speaker wafts a dreamy Strauss waltz, 250 feet of neon tubing on the under side of the airplane spells out "Dial Soap." Thus, Chuck Hoover, airplane advertising specialist, has been publicizing the well-known Armour deodorant soap in and about Pittsburgh and points west. It's had the populace craning their necks and reporters writing it up in the local papers.

* * *

Did any of you soap blokes out Cincinnati way note that our nag, "Sun Roamer," won a race a couple of weeks ago at River Downs? He was the favorite and only paid $4.60 for which we are duly thankful. Otherwise, some of our Cincinnati and Dayton pals would have accused us of covering up and failing to let them know.

* * *

A top sales mogul of one of America's largest and best-known manufacturers of shave soaps and creams was recently paid a visit in his hotel room by us while we both were in a distant city. He was shaving,—with an electric razor! After he had bought us three drinks and a steak dinner, we promised not to reveal his heresy, especially to the prez of his company.

* * *

Are dishes washed with hot water and soap protected against previous use by a person with tuberculosis? The controversy goes on and on. In fact, it has for thirty years. Latest is a reader of the *Detroit Free Press* who challenges the statement by a doctor-writer that ordinary dish washing offers sufficient disinfection for safety, says 140 degs. for 20 minutes is needed to destroy tubercle bacilli which is too hot for human hands. The doctor admits this "technicality," but concludes that washing with soap and water makes them safe in a practical way no matter what disease is involved. Who do you like in the sixth at Jamaica, Joe?

* * *

A reporter from this rag recently tried to get into the federal grand jury so-called soap monopoly hearings at Newark, N. J. It was no go. He couldn't even get his foot in the door. Guards and all that stuff. All of which makes us wonder just what in hell goes on here! What's so secret? What's to hide?

Big splash, but . . .

SOON gone and forgotten unless often repeated . . . just like some advertising . . . spectacular while it lasts . . . but regular month in and month out advertising is the kind that pays real dividends . . . the kind of dividends you can get by regular advertising to the field of soaps and detergents, disinfectants, floor products, and allied chemical specialties in

SOAP and Sanitary Chemicals
254 West 31st St., New York 1

Since 1893 a leader among Suppliers
of raw materials and perfume
Specialties for the Industry.

Ungerer & Co.

Exclusive U. S. Representatives for CHARABOT et CIE GRASSE, FRANCE 161 Sixth Ave., New York 13, N. Y.

Plant and Laboratories: Totowa, N. J.

CHICAGO · BOSTON · PHILADELPHIA · ST. LOUIS · LOS ANGELES · ATLANTA

COLLOIDAL METHOD OF FLOOR CARE

It's New! It's Homogenized!

AQUA-SHEEN is a truly revolutionary, new type of floor treatment!! It's HOMOGENIZED! When mixed with water for use in treating dust mops and dust brooms, *billions of colloidal particles go to work to beautify* floor surfaces. The colloidal suspension is the secret that makes AQUA-SHEEN a superlative product. AQUA-SHEEN makes floors shine — Shine — SHINE!! It's homogenizing that does it! It is an *entirely new principle* — a *new approach* to floor maintenance problems!!

Tremendous savings in cost and labor! Your customer mixes 1-part AQUA-SHEEN with 4-parts water, instantly reducing his cost of material by 80%!

Deodorizes! A most fragrant odor — not too strong, not too weak — just perfect for delicate freshening.

AQUA-SHEEN solutions are easily rinsed out of dust mops and brooms.

AQUA-SHEEN makes it easier to maintain clean floors and equipment.

Aqua-Sheen*

FOR LIVE FLOORS

Use Aqua-Sheen on

- WOOD
- ASPHALT TILE
- RUBBER TILE
- LINOLEUM
- COMPOSITION
- TERRAZZO
- TILE & MARBLE

JAMES Varley & SONS, INC.

JAMES VARLEY & SONS, INC.
1200 Switzer Avenue, St. Louis 15, Mo.

Please send me a FREE trial 8 oz., bottle of AQUA-SHEEN with prices and complete information.

Name.....

Firm.....

Address.....

City..... State.....